

135-TRC-09-011

SAFETY COMPLIANCE TESTING FOR FMVSS 135
Passenger Car Brake Systems

Mazda Motor Corporation
2009 Mazda3 S Touring, 4-Door Sedan
NHTSA No. C95400

TRANSPORTATION RESEARCH CENTER INC.
10820 State Route 347
East Liberty, Ohio 43319



Final Report Completed: June 8, 2009


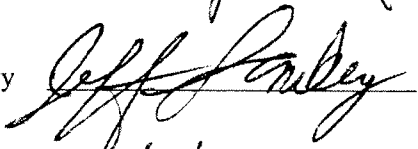
FINAL REPORT

Prepared Under Contract No.: DTNH22-06-C-00033

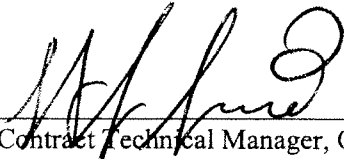
U.S. DEPARTMENT OF TRANSPORTATION
National Highway Traffic Safety Administration
Enforcement
Office of Vehicle Safety Compliance
1200 New Jersey Avenue S.E.
West Building 4th Floor
OVSC (NVS-221)
Washington, DC 20590

Prepared for the Department of Transportation, National Highway Traffic Safety Administration, under Contract No. DTNH22-06-C-00033.

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Prepared By 
Approved By 
Approval Date: 6/8/09

Final Report Acceptance By OVSC:


Contract Technical Manager, Office of
Vehicle Safety Compliance
6/16/09
Acceptance Date

1. REPORT NUMBER: 135-TRC-09-011	2. GOVERNMENT ACCESSION NO.:	3. RECIPIENTS CATALOG NO.:	
4. TITLE AND SUBTITLE: Final report of FMVSS 135 Compliance Testing of a 2009 Mazda3 S Touring, 4-Door Sedan, NHTSA No. C95400		5. REPORT DATE: June 8, 2009	
		6. PERFORMING ORGANIZATION CODE: TRC 20060110/9352	
7. AUTHOR(S): Project Manager: ALAN IDA Project Engineer: RANDALL A. LANDES		8. PERFORMING ORGANIZATION REPORT NO.: TRC-DOT-135-095	
9. PERFORMING ORGANIZATION NAME AND ADDRESS: Transportation Research Center Inc. 10820 State Route 347 East Liberty, Ohio 43319		10. WORK UNIT NUMBER:	
		11. CONTRACT OR GRANT NO.: DTNH22-06-C-00033	
12. SPONSORING AGENCY NAME AND ADDRESS: U.S. Department of Transportation National Highway Traffic Safety Administration Enforcement Office of Vehicle Safety Compliance (NVS-221) 1200 New Jersey Avenue S.E. West Wing 4 th Floor Washington, DC 20590		13. TYPE OF REPORT AND PERIOD COVERED: Final test report Tested: 05/18/09 to 06/05/09	
		14. SPONSORING AGENCY CODE: NVS-221	
15. SUPPLEMENTARY NOTES:			
16. ABSTRACT: Compliance tests were conducted on the subject 2009 Mazda3 S Touring, 4-Door Sedan, in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-135-01 for the determination of FMVSS 135 compliance. Test failures identified were as follows: None.			
17. KEY WORDS: Compliance Testing Safety Engineering FMVSS 135		18. DISTRIBUTION STATEMENT: Copies of this report are available from: NHTSA Technical Information Services NPO-411 1200 New Jersey Ave, S.E. Washington, DC 20590 Email: tis@nhtsa.dot.gov FAX: 202-493-2833	
19. SECURITY CLASSIF. (OF THIS REPORT): Unclassified	20. SECURITY CLASSIF. (OF THIS PAGE): Unclassified	21. NO. OF PAGES: 69	22. PRICE:

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1.0 INTRODUCTION

Tests were conducted on a 2009 Mazda3 S Touring, 4-Door Sedan, manufactured by Mazda Motor Corporation, to determine compliance with FMVSS 135 "Passenger Car Brake Systems." All tests were conducted in accordance with the U.S. D.O.T., NHTSA Laboratory Procedure TP 135-01 and/or the corresponding TRC Inc. Test Procedure that was submitted to NHTSA for their approval. The Test Procedure was clearly described in the submitted document and has not been repeated in this report.

All stops were performed manually.

All tests were conducted by TRC Inc. personnel using the following TRC facilities:

7.5-Mile Test Track

Vehicle Maximum Speed

Burnish

Heating Snubs and Hot Performance Stops

Brake Cooling and Recovery Stops

Skid Pad

Cold Effectiveness Stops

High Speed Effectiveness Stops

Stops with Engine Off

Failed ABS

Failed Variable Proportioning Valve (if applicable)

Failed Hydraulic Circuits

Brake Power Assist Unit Failures

RBS Failure (if applicable)

EMF (Battery) Failure (if applicable)

Brake Slope

Parking Brake

Average PFC during the test period was 0.94 (Skid Pad) and 0.92 (Test Track) utilizing the ASTM E1337 w/E1336 tire method.

The test vehicle was ABS equipped. Therefore, the Wheel Lock Sequence and Adhesion Utilization Tests were not performed.

This vehicle met the requirements of FMVSS 135.

DATA SHEET 1 - VEHICLE INFORMATION

VEHICLE SPECS

Year: 2009	NHTSA No: C95400
Mfr: MAZDA MOTOR CORPORATION	GVWR (Kg): 1792
Make: MAZDA	GAWR Front(Kg): 981
Model: MAZDA3 S TOURNG	GAWR Rear(Kg): 811
Body Style: 4 DOOR SEDAN	Wheelbase (mm): 2641.6
Mfr. Date: 09/08	Odometer: Start:246 MI. End:669 MI.
VIN: JM1BK323691232072	

BUSES ONLY

Chassis Mfg.: N/A
 Serial No.: N/A
 No. of Seats: N/A
 Manufacture Date: N/A

Engine Type: GASOLINE, MPFI, INLINE 4 CYL., PISTON, 16 VALVE, W/VVT	Tire Size: P205/50R17
Displacement: 2.3 LITER	Tire Type: EAGLE RS-A, M+S, TUBELESS RADIA
Engine Hspwr: N/A	Tire Mfr.: GOODYEAR
Idle Speed(rpm): 773	GVWR Front Press.(kpa): 220
Transmission Type: AUTO.5-SPD., FWD	GVWR Rear Press.(kpa): 220
No. of Axles: 2	

BRAKE APPLY SYSTEM

Brake Series: Front:DISC Rear:DISC	Power Assist Unit: YES
Brake Actuation	Pwr Unit w/Accumulator: NO
(Hydr. Circuit Split): DIAGONAL	Pwr Asst./Pwr Unit w/Backup: NO
Power Unit: VACUUM	Variable Prop. System: YES
Anti-Skid unit Mfr: CONTI-TEVIS	Anti-Skid Device: YES
Parking Mechanism: YES	
Type of Parking Unit: AUTOMATIC TRANSMISSION W/PARK DETENT	
Mstr Cylinder Dia(mm): 25.40	Pedal Ratio: 3.55:1

FRONT SYSTEM

BRAKE COMPONENT MATERIALS AND CONSTRUCTION:

BRAKE TYPE: DISC	Material: CAST
Drum Construction: N/A	LF Drum Shoe Cage Dia.(mm): 0.00
Disc Construction: CAST, VENTED	RF Drum Shoe Cage Dia.(mm): 0.00
Front Brake Dia.(mm): 300.03	LF Drum Dia. RESET(mm): 0.00
Fr Disc Thickness(mm): 24.90	RF Drum Dia. RESET(mm): 0.00
Lining Construction: Bonded	
FRONT BRAKE COMPONENT DIMENSIONS AND CODES:	
Inboard (Leading)	Outboard (Trailing)
Width(mm): 57.61	Width(mm): 57.58
Length(mm): 105.40	Length(mm): 105.35
Thickness(mm): 11.25	Thickness(mm): 11.30
Lining Code/Color: AK NS 530 FF	Lining Code/Color: AK NS 530 FF
Hyd. Piston Dia.(mm): 56.93 (X1)	

PLOTS\INTROPOS\SETUP + SETUP2

DATA SHEET 1 - (CONTINUED)

REAR SYSTEM

BRAKE COMPONENT MATERIALS AND CONSTRUCTION:

BRAKE TYPE: DISC

Material: CAST

Drum Construction: N/A

LR Drum Shoe Cage Dia.(mm): 0.00

Disc Construction: UNVENTED

RR Drum Shoe Cage Dia.(mm): 0.00

Lining Construction: BONDED

LR Drum Dia. RESET(mm): 0.00

Rear Brake Dia.(mm): 279.76

RR Drum Dia. RESET(mm): 0.00

Rr Disc Thickness(mm): 10.92

Lining Construction: Bonded

REAR BRAKE COMPONENT DIMENSIONS AND CODES:

Inboard (Leading)

Outboard (Trailing)

Width(mm): 40.26

Width (mm): 40.40

Length(mm): 72.08

Length (mm): 72.24

Thickness(mm): 10.16

Thickness (mm): 10.16

Lining Code/Color: AK NS 530 FF

Lining Code/Color: AK NS 530 FF

Hyd Piston Dia (mm): 37.93 (X1)

OTHER COMPONENT INFORMATION:

Friction-type Park Brake: N/A

Non-Service Brake Type

Parking Brake: HAND-OPERATED

NOTE: If at any time after the test series has begun, any brake system part requires replacement or the brake system requires adjustments other than permitted in burnish and reburnish procedures, discontinue testing and notify the COTR immediately.

Technician:

Jerry Inman
JERRY INMAN

Date:

6/8/09

Quality Assurance:

Randy Landes
RANDY LANDES

3.0 SUMMARY OF TESTING

		Specification and Limit				TEST RESULTS (In compliance if one stop meets requirement)			
TEST	Loading Conditio n	Speed (km/h)	Min. Pedal Force (N)	Max. Pedal Force (N)	Stopping Distance Requirement (m)	Shortest Stop Min. Pedal Force (N)***	Shortest Stop Max. Pedal Force Newtons (Average – N)	Shortest Stop Stopping Distance (m) (Corrected)	PASS Fail
Equipment Requirements					Specified Equipment	Vehicle contains specified equipment			Pass
Vehicle Maximum Speed	LLVW	NA				191.4 km/h avg.			NA
Burnish	GVWR	80				200, 80 - 0 km/h stops @ 3.0 mpssp			NA
Wheel Lockup Sequence w/o ABS	GVWR				Lockup of front wheels prior to rear	ABS equipped – not required.			NA
Wheel Lockup Sequence w/o ABS	LLVW					ABS equipped – not required.			NA
Adhesion Utilization w/o ABS	LLVW				Rear axle adhesion utilization curve below specified value	ABS equipped – not required.			NA
Adhesion Utilization w/o ABS	GVWR					ABS equipped – not required.			NA
Cold Effectiveness	GVWR	100	65	500	70	5	464.3	45.6	Pass
High Speed Effectiveness	GVWR	153.1	65	500	spd. depend. – 172.3	5	485.8	105.9	Pass
Stops with Engine Off	GVWR	100	65	500	70	5	472.8	44.0	Pass
Cold Effectiveness	LLVW	100	65	500	70	5	489.6	44.0	Pass
High Speed Effectiveness	LLVW	153.1	65	500	spd. depend. – 172.3	5	457.8	100.3	Pass
Failed Antilock	LLVW	100	65	500	85	5	275.7	45.7	Pass
Failed Proportioning Valve	LLVW	100	65	500	110	5	NA	NA	NA
Failed Hydraulic Circuit #1	LLVW	100	65	500	168	5	488.7	84.0	Pass
Failed Hydraulic Circuit #2	LLVW	100	65	500	168	5	479.9	87.0	Pass
Failed Hydraulic Circuit #1	GVWR	100	65	500	168	5	492.4	89.8	Pass
Failed Hydraulic Circuit #2	GVWR	100	65	500	168	5	485.1	92.7	Pass
Failed Antilock	GVWR	100	65	500	85	5	454.9	46.7	Pass
Failed Proportioning Valve	GVWR	100	65	500	110	5	NA	NA	NA
Regenerative Brake System (RBS) Failure	GVWR	100	65	500	168	5	NA	NA	NA
Electromotive Force (EMF) – Battery Failure	GVWR	100	65	500	70	5	NA	NA	NA
Power Brake Unit Failure	GVWR	100	65	500	168	5	487.5	121.7	Pass
Parking Brake - Uphill	GVWR	-	-	400	Hold for 5 min.?	NA	371.2	Yes-Holds	Pass
Parking Brake - Downhill	GVWR	-	-	400	Hold for 5 min.?	NA	375.5	Yes-Holds	Pass
Heating Snubs	GVWR	120-60	NA	NA	15 Snubs- 3.0 mpssp	5	37 Vis. Avg.	NA	NA
Hot Performance Stop #1	GVWR	100	65	390 avg	69.8	5	358.1 (276.7)	56.3	Pass
Hot Performance Stop #2	GVWR	100	65	500	89	5	571.9 (401.3)	51.1	Pass*
Brake Cooling	GVWR	50	NA	NA	4 Stops - 3.0 mpssp	5	43 Vis. Avg.	NA	NA
Recovery Performance Stop #1	GVWR	100	65	390 avg	One of the two stops between 33.9 and 61.3 meters.	5	387.3 (306.6)	49.3	Pass
Recovery Performance Stop #2	GVWR	100	65	390 avg		5	379.1 (316.6)	48.7	
Final Inspection-Brake Integrity	Check components for detachment, fracture or lubricants.					No detachments or fractures-normal appear. & colr.			Pass
Final Inspection-Reservoirs/Warning Indicators	Master cylinder or brake power reservoir shall meet the volume and label requirements of S5.4.2 and S5.4.3.					Brake system has sufficient capacity and indicators are in compliance.			Pass

*** Note: The Shortest Stop Minimum Pedal Force represents the minimum force value required to engage the data acquisition's recording mode.

* See Appendix C.

DATA SHEET 3 - VEHICLE WEIGHT

VEHICLE: 2009 MAZDA MAZDA3 S TOURNG

NHTSA No. C95400 Date: 05/19/09

Tire Pressure(cold): Front (kpa) 220 Rear (kpa) 220

Odometer: Start 246 MI. End 669 MI.

Scale(s) Used: trc sCALES

NOTE: GVWR, LLVW and axle weights to be measured within +0% and -1%.

GVWR/GAWR INFORMATION

(From Veh. Certification Label)

GVWR(Kg): 1792

GAWR Front(Kg): 981

GAWR Rear(Kg): 811

UNLOADED VEHICLE WEIGHT(UVW)

L Front(Kg): 410 L Rear(Kg): 254

R Front(Kg): 417 R Rear(Kg): 243

T Front(Kg): 827 T Rear(Kg): 497

Total UVW(Kg): 1324

TARGET LIGHT LOADED WEIGHT(LLVW):

ACTUAL LIGHT LOADED WEIGHT(LLVW):

NOTE 1: LLVW = UVW+181.4Kg

NOTE 2: Weight distributed in front passenger seat area.

NOTE 3: Neither axle load at LLVW less than at UVW; ballast as required.

L Front(Kg): 451 L Rear(Kg): 300

R Front(Kg): 463 R Rear(Kg): 292

T Front(Kg): 914 T Rear(Kg): 592

Total LLVW(Kg): 1506

L Front(Kg): 456 L Rear(Kg): 302

R Front(Kg): 458 R Rear(Kg): 290

T Front(Kg): 914 T Rear(Kg): 592

Total Actual Test LLVW(Kg): 1506

Load: Driver/Observer 91(Kg) + Instru. 41(Kg) + Ballast 50(Kg) = 182(Kg)

FULLY LOADED TEST WEIGHT (ACTUAL GVWR)

NOTE 1: Vehicle loaded so axle loads proportional to GAWR shown previously.

NOTE 2: But no axle weight to be less than at LLVW.

NOTE 3: If weight on any axle at LLVW exceeds the axle's proportional share of the GVWR, the load required to reach GVWR is placed so that the weight on that axle remains the same as at LLVW.

L Front(Kg): 487 L Rear(Kg): 414

R Front(Kg): 495 R Rear(Kg): 396

T Front(Kg): 982 T Rear(Kg): 810

Total Fully Loaded GVWR(Kg): 1792

Load: Driver/Observer 91(Kg) + Instru. 41(Kg) + Ballast 336(Kg)= 468(kg)

Technician: Jerry Inman

JERRY INMAN

Date: 6/8/09

Quality Assurance: Randy Landes

RANDY LANDES

DATA SHEET 4 - EQUIPMENT REQUIREMENTS (S5)

SERVICE BRAKE SYSTEM (S5.1)

Vehicle equipped with a service brake system acting on all wheels? YES

Wear Adjustment (S5.1.1):

Service Brakes are compensated for wear by means of a system of automatic adjustment? YES

Describe: DISC:AUTOMATIC CLEARANCE TAKE-UP.

Wear Status (S5.1.2):

Wear status of service brakes is indicated by:

(A) Acoustic or optical device? YES

Describe: METAL TAB EMITS HIGH FREQUENCY SQUEAL WHEN WORN.

(B) Visual check outside or under vehicle? YES

Describe: FRONT AND REAR:LOOK THROUGH CALIPER.

PARKING BRAKE SYSTEM (S5.2)

Vehicle equipped with a parking brake system of a friction type with solely mechanical means to retain engagement: YES

CONTROLS (S5.3)

(A) Service brakes activated by means of a foot control? YES

(B) Parking brake control is independent of the service brake control? YES

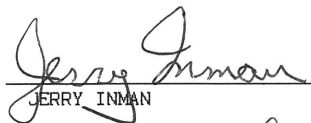
(C) Parking brake control is hand or foot operated? YES

(D) ABS, if equipped, cannot be manually disabled? YES

DATA INDICATES COMPLIANCE:

COMMENTS: NONE.

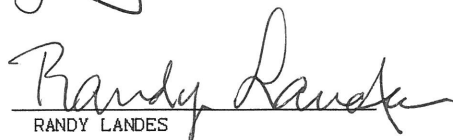
Tester/Technician:


JERRY INMAN

Date:



Quality Assurance:


RANDY LANDES

DATA SHEET 5 - VEHICLE MAX SPEED

VEHICLE: 2009 MAZDA MAZDA3 S TOURNG

NHTSA No. C95400

Date: 05/19/09

Ambient Temperature: 65°F

Wind Velocity: 10(MPH)

Road PFC: .92

Wind Direction: 146°

Odometer: Start 259(mi) End 271(mi)

TEST WEIGHT: Total (Kg): 1506

Front (Kg): 914

Rear (Kg): 592

ESTABLISH VEHICLE MAXIMUM SPEED

VEHICLE LOAD: LLVW

IBT: N/A

GEAR: Drive

DECEL RATE: N/A

PEDAL FORCE: N/A

WHEEL LOCKUP: N/A

TEST SPEED: Maximum attainable from

INTERVAL: N/A

a standing start in 3.2 km.

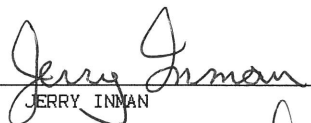
1. Ballast Vehicle to LLVW
2. Accelerate at a maximum rate from a standing start for a distance of 3.2 km on a level surface.
3. Repeat in opposite direction.
4. Record speed attained in each direction and use the average of the two runs.

	DIRECTION	MAX SPEED (km/h)		Time 0 - 100 km/h (seconds)
		Visual	Recorded	
Run No. 1	South	191	190.7	10.68
Run No. 2	North	192	192.0	9.94

AVERAGE = 191.4 km/h

COMMENTS: INV DATA, Section 0001, 05/19/09, 11:41:06

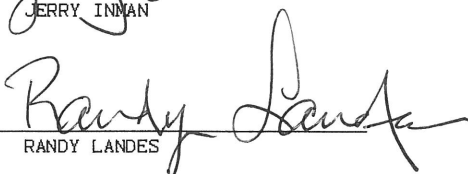
Tester/Technician:


JERRY INMAN

Date:

6/8/09

Quality Assurance:


RANDY LANDES

Vehicle: 2009 MAZDA MOTOR COR NHTSA NUMBER: C95400
 Make: MAZDA
 Model: MAZDA3 S TOURNG
 Body Style: 4 DOOR SEDAN
 Front Cold Tire Pressure: 220 (Kpa)
 Rear Cold Tire Pressure: 220 (Kpa)

Transportation Research Center, Inc.
 10820 State Route 347
 East Liberty, Ohio 43319
 (937)666-2011 www.trcpg.com

Date Tested: 05/19/09

DATA SHEET 6 - BURNISH AT GVWR

Testing Conditions: INV DATA, Section 0002, 05/19/09, 14:06:42

Weather Conditions: 78°F Wind: 9 mph 166°

Start Odo.: 276 End Odo.: 510

Schedule:

Initial Brake Temperature Less Than 100°C
 Initial Speed 80 km/h to zero
 200 stops with transmission in gear

Performance Requirements:

Interval between runs: Time necessary to reduce IBT to 100 C° or 2 km distance, whichever occurs first.
 Constant decel rate: 3.0 m/s²
 Pedal force adjusted to maintain constant decel.
 No Lock-Up allowed longer than 0.1 sec above 15 km/h
 Vehicle Must stay in lane of 3.5m

STOP	INIT	LEFT	RIGHT	LEFT	RIGHT	MAX.	AVG.	
#	SPD	FRONT	FRONT	REAR	REAR	PEDAL	PEDAL	AVG.
	(kph)	IBT	IBT	IBT	IBT	FORCE	FORCE	DECEL
		(°C)	(°C)	(°C)	(°C)	(N)	(N)	(m/sec ²)
1	80.77	32	32	29	28	65.24	49.48	3.12
10	80.54	96	92	81	86	50.06	37.41	3.11
20	79.56	99	96	81	86	56.87	44.11	2.94
30	80.75	98	96	81	87	64.14	47.57	2.99
40	81.56	93	92	77	83	63.28	48.44	3.13
50	81.27	93	93	78	84	57.21	46.13	3.08
60	80.68	97	92	74	81	53.18	39.93	3.05
70	80.34	99	95	76	82	52.49	39.58	2.99
80	80.72	98	94	74	78	58.94	43.85	2.89
90	80.99	100	97	76	81	56.52	45.46	2.96
100	80.96	97	94	73	77	59.86	47.36	3.03
110	80.26	90	89	71	76	59.52	47.53	3.01
120	81.21	97	95	74	79	57.04	46.27	3.16
130	81.10	99	97	78	81	52.32	41.02	2.95
140	81.55	96	93	75	78	56.12	44.88	3.07
150	80.66	99	97	75	79	51.68	42.29	2.95
160	80.21	97	94	75	79	53.70	42.52	2.96
170	81.31	94	93	70	76	55.49	42.84	3.12
180	80.78	91	92	71	76	58.61	45.73	2.98
190	81.39	97	97	75	78	57.51	46.42	3.12
200	80.61	93	94	73	77	64.73	48.27	3.19

COMMENTS: THIS VEHICLE ABS EQUIPPED. DATA SHEETS 7-10 NOT INCLUDED.

BRAKE ADJUSTMENT

Schedule:

Adjust service brakes; record procedure and amount adjusted.

Left Front: DISC NONE
 Right Front: DISC NONE
 Left Rear: DISC NONE
 Right Rear: DISC NONE

DATA INDICATES COMPLIANCE: YES (X) NO ()

Driver: JERRY INMAN

Observer: NONE

Recorded Data Processed by: CHUCK JENKINS

Date: 06/03/09

Approving Laboratory Official: RANDY LANDES

Date: 06/05/09

Vehicle: 2009 MAZDA MOTOR COR NHTSA NUMBER: C95400
 Make: MAZDA
 Model: MAZDA3 S TOURNG
 Body Style: 4 DOOR SEDAN
 Front Cold Tire Pressure: 220 (Kpa)
 Rear Cold Tire Pressure: 220 (Kpa)

Transportation Research Center, Inc.
 10820 State Route 347
 East Liberty, Ohio 43319
 (937) 666-2011 www.trcpg.com

Date Tested: 05/26/09

DATA SHEET 11 - COLD EFFECTIVENESS AT GVWR

Testing Conditions: INV DATA, Section 0015, 05/26/09, 08:51:02

Weather Conditions: 66°F Wind: 3 mph 167° Start Odo.: 522 End Odo.: 527

Schedule:

Initial Brake Temperature 65 - 100 C
 Initial Speed 100 km/h to zero
 6 stops with transmission in neutral

Performance Requirements:

One Stop with:
 Stopping Distance less than 70m
 Pedal force between 65N and 500N
 No Lock-Up allowed longer than 0.1 sec above 15 km/h
 Vehicle Must stay in lane of 3.5m

STOP	INIT	LEFT	RIGHT	LEFT	RIGHT	ACTUAL	CORRECTED	MAX.	AVG.	MAX.	AVG.
#	SPD	FRONT	FRONT	REAR	REAR	DISTANCE	DISTANCE	PEDAL	PEDAL	DECEL	DECEL
	(kph)	(°C)	(°C)	(°C)	(°C)	(meter)	(meter)	(N)	(N)	(m/sec ²)	(m/sec ²)
1	99.22	77	74	53	57	54.4	55.2	411.34	304.13	9.35	7.29
2	100.20	80	77	53	56	51.1	50.9	446.94	386.45	10.36	7.57
3	99.32	89	88	59	62	46.9	47.6	446.02	390.72	11.01	7.89
4	98.76	92	90	62	61	46.1	47.2	479.67	436.40	10.76	8.03
5	99.58	94	95	63	61	45.2	45.6	513.43	429.14	12.30	8.36
6	100.27	91	93	62	57	45.9	45.6	464.28	390.43	11.24	7.58

STOP	DRIVER VEHICLE STOP COMMENTS			
#	(Wheel Lock up - Direction of Stop - Stay in Lane)			
1	-	NOX	SOUTH	YES
2	-	NOX	SOUTH	YES
3	-	NOX	SOUTH	YES
4	-	NOX	SOUTH	YES
5	-	NOX	SOUTH	YES
6	-	NOX	SOUTH	YES

Corrected Distances are used to determine shortest stopping distance.

DATA INDICATES COMPLIANCE: YES (X) NO ()

Driver: JERRY INMAN Observer: NONE
 Recorded Data Processed by: CHUCK JENKINS Date: 06/03/09
 Approving Laboratory Official: RANDY LANDES Date: 06/05/09

Vehicle: 2009 MAZDA MOTOR COR	NHTSA NUMBER: C95400	Transportation Research Center, Inc.
Make: MAZDA		10820 State Route 347
Model: MAZDA3 S TOURNG		East Liberty, Ohio 43319
Body Style: 4 DOOR SEDAN		(937)666-2011 www.trcpg.com
Front Cold Tire Pressure: 220 (Kpa)		
Rear Cold Tire Pressure: 220 (Kpa)		Date Tested: 05/26/09

DATA SHEET 12 - HIGH SPEED EFFECTIVENESS AT GVWR

Testing Conditions: INV DATA, Section 0020, 05/26/09, 09:43:53

Weather Conditions: 72°F Wind: 9 mph 158° Start Odo: 529 End Odo: 539

Schedule:

Initial Brake Temperature: 65-100°C
 Initial Speed: 80% max km/h, not greater than 160km/h
 6 stops with transmission in gear
 Target Initial Speed: 153.09 kph

Performance Requirements:

One Stop with:
 Stopping Distance less than: 172.3 meter
 Pedal force between 65N and 500N
 No Lock-Up allowed longer than 0.1 sec above 15 km/h
 Vehicle Must stay in lane of 3.5m

STOP #	INIT SPD	LEFT FRONT	RIGHT FRONT	LEFT REAR	RIGHT REAR	ACTUAL DISTANCE	CORRECTED DISTANCE	MAX. PEDAL FORCE	AVG. PEDAL FORCE	MAX. DECEL	AVG. DECEL
	(kph)	(°C)	(°C)	(°C)	(°C)	(meter)	(meter)	(N)	(N)	(m/sec ²)	(m/sec ²)
1	151.59	92	92	63	55	106.5	108.7	465.38	414.97	12.65	8.03
2	154.14	81	86	59	50	111.7	110.2	431.79	370.90	12.12	7.99
3	153.17	84	88	61	51	106.0	105.9	485.77	406.50	13.10	7.28
4	153.42	86	89	62	51	107.8	107.3	505.71	430.87	13.64	8.48
5	153.30	88	89	59	48	106.6	106.3	482.09	428.62	13.21	8.76
6	153.18	90	97	61	51	108.4	108.3	453.57	397.05	12.15	8.69

STOP #	DRIVER VEHICLE STOP COMMENTS		
	(Wheel Lock up - Direction of Stop - Stay in Lane)		
1	-	NOX	SOUTH YES
2	-	NOX	SOUTH YES
3	-	NOX	SOUTH YES
4	-	NOX	SOUTH YES
5	-	NOX	SOUTH YES
6	-	NOX	SOUTH YES

DATA INDICATES COMPLIANCE: YES (X) NO ()

Driver: JERRY INMAN	Observer: NONE
Recorded Data Processed by: CHUCK JENKINS	Date: 06/03/09
Approving Laboratory Official: RANDY LANDES	Date: 06/05/09

Vehicle: 2009 MAZDA MOTOR COR	NHTSA NUMBER: C95400	Transportation Research Center, Inc.
Make: MAZDA		10820 State Route 347
Model: MAZDA3 S TOURNG		East Liberty, Ohio 43319
Body Style: 4 DOOR SEDAN		(937)666-2011 www.trcpg.com
Front Cold Tire Pressure: 220 (Kpa)		
Rear Cold Tire Pressure: 220 (Kpa)		Date Tested: 05/26/09

DATA SHEET 13 - STOPS WITH ENGINE OFF AT GVWR

Testing Conditions: INV DATA, Section 0025, 05/26/09, 10:58:40

Weather Conditions: 74°F Wind: 11 mph 194° Start Odo.: 540 End Odo.: 544

Schedule:

Initial Brake Temperature: 65-100°C
Initial Speed 100 km/h to zero
6 stops with transmission in neutral

Performance Requirements:

One Stop with:
Stopping Distance less than 70m
Pedal force between 65N and 500N
No Lock-Up allowed longer than 0.1 sec above 15 km/h
Vehicle Must stay in lane of 3.5m

STOP #	INIT SPD	LEFT FRONT	RIGHT FRONT	LEFT REAR	RIGHT REAR	ACTUAL DISTANCE	CORRECTED DISTANCE	MAX. PEDAL FORCE	AVG. PEDAL FORCE	MAX. DECEL	AVG. DECEL
	(kph)	(°C)	(°C)	(°C)	(°C)	(meter)	(SAE 299) (meter)	(N)	(N)	(m/sec ²)	(m/sec ²)
1	99.80	70	72	49	41	49.7	49.9	455.64	356.84	10.55	7.13
2	100.14	83	85	61	53	47.0	46.8	468.03	392.85	11.86	7.63
3	101.18	90	90	66	59	46.8	45.7	474.02	398.90	11.27	7.68
4	99.75	92	92	67	61	44.6	44.8	511.76	410.76	13.54	8.55
5	99.44	94	95	68	62	43.5	44.0	472.81	413.36	12.69	8.19
6	99.51	93	95	67	60	43.5	43.9	542.29	425.97	12.27	7.99

STOP #	DRIVER VEHICLE STOP COMMENTS			
	(Wheel Lock-Up - Direction of Stop - Stay in Lane)			
1	-	NOX	SOUTH	YES
2	-	NOX	SOUTH	YES
3	-	NOX	SOUTH	YES
4	-	NOX	SOUTH	YES
5	-	NOX	SOUTH	YES
6	-	NOX	SOUTH	YES

DATA INDICATES COMPLIANCE: YES (X) NO ()

Driver: JERRY INMAN	Observer: NONE
Recorded Data Processed by: CHUCK JENKINS	Date: 06/03/09
Approving Laboratory Official: RANDY LANDES	Date: 06/05/09

Vehicle: 2009 MAZDA MOTOR COR NHTSA NUMBER: C95400
 Make: MAZDA
 Model: MAZDA3 S TOURNG
 Body Style: 4 DOOR SEDAN
 Front Cold Tire Pressure: 220 (Kpa)
 Rear Cold Tire Pressure: 220 (Kpa)

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Date Tested: 05/26/09

DATA SHEET 14 - COLD EFFECTIVENESS AT LLVW

Testing Conditions: INV DATA, Section 0030, 05/26/09, 13:31:21

Weather Conditions: 78°F Wind: 6 mph 180° Start Odo.: 549 End Odo.: 554

Schedule:

Initial Brake Temperature: 65-100°C
 Initial Speed 100 km/h to zero
 6 stops with transmission in neutral

Performance Requirements:

One Stop with:
 Stopping Distance less than 70m
 Pedal force between 65N and 500N
 No Lock-Up allowed longer than 0.1 sec above 15 km/h
 Vehicle Must stay in lane of 3.5m

STOP #	INIT	LEFT FRONT	RIGHT FRONT	LEFT REAR	RIGHT REAR	ACTUAL DISTANCE	CORRECTED DISTANCE	MAX. PEDAL	AVG. PEDAL	MAX. DECEL	AVG. DECEL
	SPD (kph)	IBT (°C)	IBT (°C)	IBT (°C)	IBT (°C)	(meter)	(SAE 299) (meter)	FORCE (N)	FORCE (N)	(m/sec ²)	(m/sec ²)
1	99.17	74	76	51	52	45.5	46.3	430.41	375.39	11.96	8.48
2	99.81	84	84	53	52	43.8	44.0	434.33	348.08	14.30	7.83
3	99.38	93	93	54	54	44.5	45.0	461.40	343.24	18.29	7.71
4	99.06	98	97	55	57	43.8	44.7	505.53	411.80	14.25	8.61
5	98.71	95	94	52	54	43.7	44.8	462.56	385.01	13.96	8.60
6	100.23	96	93	52	53	44.2	44.0	489.63	414.28	16.74	8.75

STOP #	DRIVER VEHICLE STOP COMMENTS (Wheel Lock-Up - Direction of Stop - Stay in Lane)		
1	-	NOX	SOUTH YES
2	-	NOX	SOUTH YES
3	-	NOX	SOUTH YES
4	-	NOX	SOUTH YES
5	-	NOX	SOUTH YES
6	-	NOX	SOUTH YES

DATA INDICATES COMPLIANCE: YES (X) NO ()

Driver: JERRY INMAN Observer: NONE
 Recorded Data Processed by: CHUCK JENKINS Date: 06/03/09
 Approving Laboratory Official: RANDY LANDES Date: 06/05/09

Vehicle: 2009 MAZDA MOTOR COR NHTSA NUMBER: C95400 Transportation Research Center, Inc.
 Make: MAZDA 10820 State Route 347
 Model: MAZDA3 S TOURNG East Liberty, Ohio 43319
 Body Style: 4 DOOR SEDAN (937)666-2011 www.trcpg.com
 Front Cold Tire Pressure: 220 (Kpa)
 Rear Cold Tire Pressure: 220 (Kpa) Date Tested: 05/26/09

DATA SHEET 15 - HIGH SPEED EFFECTIVENESS AT LLVW

Testing Conditions: INV DATA, Section 0035, 05/26/09, 14:37:11

Weather Conditions: 81°F Wind: 6 mph 214° Start Odo.: 557 End Odo.: 565

Schedule:

Initial Brake Temperature: 65-100°C
 Initial Speed: 80% max km/h
 6 stops with transmission in gear

Performance Requirements:

One Stop with:
 Stopping Distance less than 172.3m
 Pedal force between 65N and 500N
 No Lock-Up allowed longer than 0.1 sec above 15 km/h
 Vehicle Must stay in lane of 3.5m

STOP #	INIT SPD (kph)	LEFT FRONT IBT (°C)	RIGHT FRONT IBT (°C)	LEFT REAR IBT (°C)	RIGHT REAR IBT (°C)	ACTUAL DISTANCE (meter)	CORRECTED DISTANCE (SAE 299) (meter)	PEDAL FORCE (N)	MAX. PEDAL FORCE (N)	AVG. PEDAL FORCE (N)	MAX. DECEL (m/sec²)	AVG. DECEL (m/sec²)
1	153.41	69	72	50	51	101.6	101.2	488.88	394.86	15.81	15.81	9.03
2	152.50	85	82	48	51	99.6	100.3	457.83	380.75	15.64	15.64	8.93
3	151.84	95	89	51	53	100.5	102.2	490.27	423.61	17.29	17.29	9.24
4	153.33	95	93	51	52	100.8	100.5	486.64	392.27	17.58	17.58	8.22
5	154.70	89	94	53	49	103.1	101.0	484.45	393.42	17.51	17.51	8.42
6	152.92	90	94	53	52	98.6	98.8	566.77	423.15	19.85	19.85	8.78

STOP #	DRIVER VEHICLE STOP COMMENTS (Wheel Lock-Up - Direction of Stop - Stay in Lane)		
1	-	NOX	SOUTH YES
2	-	NOX	SOUTH YES
3	-	NOX	SOUTH YES
4	-	NOX	SOUTH YES
5	-	NOX	SOUTH YES
6	-	NOX	SOUTH YES

DATA INDICATES COMPLIANCE: YES (X) NO ()

Driver: JERRY INMAN Observer: NONE
 Recorded Data Processed by: CHUCK JENKINS Date: 06/03/09
 Approving Laboratory Official: RANDY LANDES Date: 06/05/09

Vehicle: 2009 MAZDA MOTOR COR NHTSA NUMBER: C95400 Transportation Research Center, Inc.
 Make: MAZDA 10820 State Route 347
 Model: MAZDA3 S TOURNG East Liberty, Ohio 43319
 Body Style: 4 DOOR SEDAN (937)666-2011 www.trcpg.com
 Front Cold Tire Pressure: 220 (Kpa)
 Rear Cold Tire Pressure: 220 (Kpa) Date Tested: 05/27/09

DATA SHEET 16 - ANTILOCK FUNCTIONAL FAILURE AT LLVW

Testing Conditions: INV DATA, Section 0040, 05/27/09, 08:17:53

Weather Conditions: 70°F Wind: 9 mph 174° Start Odo.: 574 End Odo.: 579

Schedule:

Initial Brake Temperature: 65-100°C
 Initial Speed 100 km/h to zero
 6 stops with transmission in neutral

Performance Requirements:

One Stop with:
 Stopping Distance less than 85m
 Pedal force between 65N and 500N
 No Lock-Up allowed longer than 0.1 sec above 15 km/h
 Vehicle Must stay in lane of 3.5m

STOP	INIT	LEFT	RIGHT	LEFT	RIGHT	ACTUAL	CORRECTED	MAX.	AVG.		
#	SPD	FRONT	FRONT	REAR	REAR	DISTANCE	DISTANCE	PEDAL	PEDAL	MAX.	AVG.
	(kph)	(°C)	(°C)	(°C)	(°C)	(meter)	(meter)	(N)	(N)	(m/sec ²)	(m/sec ²)
=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
1	99.92	72	73	56	53	57.2	57.3	205.27	162.99	10.35	6.82
2	99.95	74	74	53	49	50.6	50.7	242.75	179.41	9.98	7.17
3	100.37	77	78	53	49	52.2	51.8	215.22	184.33	10.16	7.48
4	100.28	84	86	54	51	49.5	49.2	249.11	203.19	11.95	7.43
5	99.23	82	83	53	48	46.4	47.2	277.10	229.10	12.70	7.74
6	100.26	92	92	55	52	46.0	45.7	275.71	225.63	11.70	7.83

STOP	DRIVER VEHICLE STOP COMMENTS				
#	(Wheel Lock-Up - Direction of Stop - Stay in Lane)				
=====	=====				
1	-		NOX	SOUTH	YES
2	-		NOX	SOUTH	YES
3	-		NOX	SOUTH	YES
4	-		NOX	SOUTH	YES
5	-		NOX	SOUTH	YES
6	-		NOX	SOUTH	YES

Comments: See Appendix C.

How was the ABS failure induced: DISCONNECT RIGHT FRONT WHEEL SPEED SENSOR

Is brake system indicator lamp activated: YES (X) NO ()

Vehicle equipped with ABS integral variable proportioning valve. Cannot separately fail. Data Sheet 17 not included.

DATA INDICATES COMPLIANCE: YES (X) NO ()

Driver: JERRY INMAN Observer: NONE
 Recorded Data Processed by: CHUCK JENKINS Date: 06/03/09
 Approving Laboratory Official: RANDY LANDES Date: 06/05/09

Vehicle: 2009 MAZDA MOTOR COR NHTSA NUMBER: C95400
 Make: MAZDA
 Model: MAZDA3 S TOURNG
 Body Style: 4 DOOR SEDAN
 Front Cold Tire Pressure: 220 (Kpa)
 Rear Cold Tire Pressure: 220 (Kpa)

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 East Liberty, Ohio 43319
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Date Tested: 05/27/09

DATA SHEET 18 - HYDRAULIC CIRCUIT FAILURE #1 AT LLVW

Testing Conditions: INV DATA, Section 0050, 05/27/09, 11:26:56

Weather Conditions: 77°F Wind: 10 mph 232° Start Odo.: 583 End Odo.: 586

Method of simulating failure: Disconnected Brake Line @ M/C Front Port

System Portion Failed: LF & RR

Schedule:

Initial Brake Temperature: 65-100°C
 Initial Speed 100 km/h to zero
 4 stops with transmission in neutral

Performance Requirements:

One Stop with:
 Stopping Distance less than 168m
 Pedal force between 65N and 500N
 No Lock-Up allowed longer than 0.1 sec above 15 km/h
 Vehicle Must stay in lane of 3.5m

STOP	INIT	LEFT	RIGHT	LEFT	RIGHT	ACTUAL	CORRECTED	MAX.	AVG.	MAX.	AVG.
#	SPD	IBT	IBT	IBT	IBT	DISTANCE	(SAE 299)	PEDAL	PEDAL	DECEL	DECEL
	(kph)	(°C)	(°C)	(°C)	(°C)	(meter)	(meter)	(N)	(N)	(m/sec ²)	(m/sec ²)
1	99.63	27	71	51	25	87.1	87.8	487.05	417.53	7.68	4.47
2	100.40	31	89	58	28	85.8	85.1	476.18	427.83	7.33	4.75
3	99.51	34	96	58	28	85.0	85.9	480.23	418.57	7.23	4.43
4	100.49	37	96	59	29	84.8	84.0	488.67	437.08	8.08	4.58

STOP	DRIVER VEHICLE STOP COMMENTS			
#	(Wheel Lock-Up - Direction of Stop - Stay in Lane)			
1	-	NOX	SOUTH	YES
2	-	NOX	SOUTH	YES
3	-	NOX	SOUTH	YES
4	-	NOX	SOUTH	YES

Force Needed to Activate Brake Failure Lamp (N): N/A
 Fluid Removed (mL) to Activate Brake Failure Lamp: 185

Is brake system indicator lamp activated: YES (X) NO ()

DATA INDICATES COMPLIANCE: YES (X) NO ()

Driver: JERRY INMAN Observer: NONE
 Recorded Data Processed by: CHUCK JENKINS Date: 06/03/09
 Approving Laboratory Official: RANDY LANDES Date: 06/05/09

Vehicle: 2009 MAZDA MOTOR COR NHTSA NUMBER: C95400
 Make: MAZDA
 Model: MAZDA3 S TOURNG
 Body Style: 4 DOOR SEDAN
 Front Cold Tire Pressure: 220 (Kpa)
 Rear Cold Tire Pressure: 220 (Kpa)

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 10820 State Route 347
 East Liberty, Ohio 43319
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Date Tested: 05/27/09

DATA SHEET 19 - HYDRAULIC CIRCUIT FAILURE #2 AT LLVW

Testing Conditions: INV DATA, Section 0055, 05/27/09, 13:45:34

Weather Conditions: 79°F Wind: 17 mph 202° Start Odo.: 589 End Odo.: 592

Method of simulating failure: Disconnected Brake Line @ M/C Rear Port

System Portion Failed: RF & LR

Schedule:

Initial Brake Temperature 65-100°C
 Initial Speed 100 km/h to zero
 4 stops with transmission in neutral

Performance Requirements:

One Stop with:
 Stopping Distance less than 168m
 Pedal force between 65N and 500N
 No Lock-Up allowed longer than 0.1 sec above 15 km/h
 Vehicle Must stay in lane of 3.5m

STOP #	INIT SPD	LEFT FRONT	RIGHT FRONT	LEFT REAR	RIGHT REAR	ACTUAL DISTANCE	CORRECTED DISTANCE	MAX. PEDAL	AVG. PEDAL	MAX. DECEL	AVG. DECEL
	(kph)	(°C)	(°C)	(°C)	(°C)	(meter)	(meter)	(N)	(N)	(m/sec ²)	(m/sec ²)
=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
1	100.04	67	32	27	49	87.3	87.3	474.29	425.29	7.11	4.63
2	99.94	85	32	29	54	89.0	89.1	473.65	412.53	6.96	4.48
3	99.79	95	32	32	54	86.7	87.0	501.30	444.56	7.89	4.50
4	99.74	96	33	33	54	86.6	87.0	479.88	428.92	7.96	4.27

STOP #	DRIVER VEHICLE STOP COMMENTS (Wheel Lock-Up - Direction of Stop - Stay in Lane)			
=====	=====			
1	-	NOX	SOUTH	YES
2	-	NOX	SOUTH	YES
3	-	NOX	SOUTH	YES
4	-	NOX	SOUTH	YES

Force Needed to Activate Brake Failure Lamp (N): N/A
 Fluid Removed (mL) to Activate Brake Failure Lamp: 185

Is brake system indicator lamp activated: YES (X) NO ()

DATA INDICATES COMPLIANCE: YES (X) NO ()

Driver: JERRY INMAN Observer: NONE
 Recorded Data Processed by: CHUCK JENKINS Date: 06/03/09
 Approving Laboratory Official: RANDY LANDES Date: 06/05/09

Vehicle: 2009 MAZDA MOTOR COR NHTSA NUMBER: C95400 Transportation Research Center, Inc.
 Make: MAZDA 10820 State Route 347
 Model: MAZDA3 S TOURNG East Liberty, Ohio 43319
 Body Style: 4 DOOR SEDAN (937)666-2011 www.trcpg.com
 Front Cold Tire Pressure: 220 (Kpa)
 Rear Cold Tire Pressure: 220 (Kpa) Date Tested: 05/28/09

DATA SHEET 20 - HYDRAULIC CIRCUIT FAILURE #1 AT GVWR

Testing Conditions: INV DATA, Section 0060, 05/28/09, 12:41:14

Weather Conditions: 55°F Wind: 13 mph 309° Start Odo.: 611 End Odo.: 619

Method of simulating failure: Disconnected Brake Line @ M/C Front Port

System Portion Failed: LF & RR

Schedule:

Initial Brake Temperature 65-100°C
 Initial Speed 100 km/h to zero
 6 stops with transmission in neutral

Performance Requirements:

One Stop with:
 Stopping Distance less than 168m
 Pedal force between 65N and 500N
 No Lock-Up allowed longer than 0.1 sec above 15 km/h
 Vehicle Must stay in lane of 3.5m

		LEFT	RIGHT	LEFT	RIGHT		CORRECTED	MAX.	AVG.		
STOP	INIT	FRONT	FRONT	REAR	REAR	ACTUAL	DISTANCE	PEDAL	PEDAL	MAX.	AVG.
#	(kph)	(°C)	(°C)	(°C)	(°C)	(meter)	(SAE 299)	FORCE	FORCE	DECEL	DECEL
							(meter)	(N)	(N)	(m/sec ²)	(m/sec ²)
====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
1	99.99	26	96	63	26	92.2	92.2	484.72	431.94	5.86	4.20
2	99.59	19	77	47	17	92.2	92.9	493.69	451.36	5.94	4.21
3	100.29	19	93	48	17	91.3	90.7	482.10	437.64	6.98	4.36
4	100.90	20	90	42	17	91.5	89.8	492.36	451.30	7.04	4.25

STOP DRIVER VEHICLE STOP COMMENTS
 # (Wheel Lock-Up - Direction of Stop - Stay in Lane)

====	=====	=====	=====	=====	=====
1	-		NOX	SOUTH	YES
2	-		NOX	SOUTH	YES
3	-		NOX	SOUTH	YES
4	-		NOX	SOUTH	YES

Is brake system indicator lamp activated: YES (X) NO ()

DATA INDICATES COMPLIANCE: YES (X) NO ()

Driver: JERRY INMAN Observer: NONE
 Recorded Data Processed by: CHUCK JENKINS Date: 06/03/09
 Approving Laboratory Official: RANDY LANDES Date: 06/05/09

Vehicle: 2009 MAZDA MOTOR COR NHTSA NUMBER: C95400 Transportation Research Center, Inc.
 Make: MAZDA 10820 State Route 347
 Model: MAZDA3 S TOURNG East Liberty, Ohio 43319
 Body Style: 4 DOOR SEDAN (937)666-2011 www.trcpg.com
 Front Cold Tire Pressure: 220 (Kpa)
 Rear Cold Tire Pressure: 220 (Kpa) Date Tested: 05/27/09

DATA SHEET 21 - HYDRAULIC CIRCUIT FAILURE #2 AT GVWR

Testing Conditions: INV DATA, Section 0065, 05/27/09, 14:41:09

Weather Conditions: 80°F Wind: 15 mph 198° Start Odo.: 595 End Odo.: 598

Method of simulating failure: Disconnected Brake Line @ M/C Rear Port

System Portion Failed: RF & LR

Schedule:

Initial Brake Temperature 65-100°C
 Initial Speed 100 km/h to zero
 4 stops with transmission in neutral

Performance Requirements:

One Stop with:
 Stopping Distance less than 168m
 Pedal force between 65N and 500N
 No Lock-Up allowed longer than 0.1 sec above 15 km/h
 Vehicle Must stay in lane of 3.5m

		LEFT	RIGHT	LEFT	RIGHT		CORRECTED	MAX.	AVG.		
STOP	INIT	FRONT	FRONT	REAR	REAR	ACTUAL	DISTANCE	PEDAL	PEDAL	MAX.	AVG.
#	(kph)	(°C)	(°C)	(°C)	(°C)	(meter)	(SAB 299)	FORCE	FORCE	DECEL	DECEL
							(meter)	(N)	(N)	(m/sec ²)	(m/sec ²)
1	100.60	68	34	33	45	94.8	93.7	498.03	449.09	6.62	4.17
2	100.79	88	35	34	57	94.1	92.7	485.06	431.74	6.92	4.08
3	99.86	98	36	36	66	93.4	93.6	479.41	430.36	6.82	4.14
4	99.50	93	36	38	61	92.8	93.8	507.48	442.00	7.10	4.05

STOP	DRIVER VEHICLE STOP COMMENTS			
#	(Wheel Lock-Up - Direction of Stop - Stay in Lane)			
1	-	NOX	SOUTH	YES
2	-	NOX	SOUTH	YES
3	-	NOX	SOUTH	YES
4	-	NOX	SOUTH	YES

Is brake system indicator lamp activated: YES (X) NO ()

DATA INDICATES COMPLIANCE: YES (X) NO ()

Driver: JERRY INMAN Observer: NONE
 Recorded Data Processed by: CHUCK JENKINS Date: 06/03/09
 Approving Laboratory Official: RANDY LANDES Date: 06/05/09

Vehicle: 2009 MAZDA MOTOR COR NHTSA NUMBER: C95400
Make: MAZDA
Model: MAZDA3 S TOURNG
Body Style: 4 DOOR SEDAN
Front Cold Tire Pressure: 220 (Kpa)
Rear Cold Tire Pressure: 220 (Kpa)

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East Liberty, Ohio 43319
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Date Tested: 05/29/09

DATA SHEET 22 - ANTILOCK FUNCTIONAL FAILURE AT GVWR

Testing Conditions: INV DATA, Section 0070, 05/29/09, 09:42:44

Weather Conditions: 61°F Wind: 6 mph 321° Start Odo.: 622 End Odo.: 626

Schedule:

Initial Brake Temperature 65-100°C
Initial Speed 100 km/h to zero
6 stops with transmission in neutral

Performance Requirements:

One Stop with:
Stopping Distance less than 85m
Pedal force between 65N and 500N
No Lock-Up allowed longer than 0.1 sec above 15 km/h
Vehicle Must stay in lane of 3.5m

STOP	INIT	LEFT	RIGHT	LEFT	RIGHT	ACTUAL	CORRECTED	MAX.	AVG.	MAX.	AVG.
#	SPD	FRONT	FRONT	REAR	REAR	DISTANCE	DISTANCE	PEDAL	PEDAL	DECEL	DECEL
	(kph)	(°C)	(°C)	(°C)	(°C)	(meter)	(meter)	(N)	(N)	(m/sec ²)	(m/sec ²)
1	99.30	66	71	47	48	57.7	58.5	338.28	276.00	9.56	6.98
2	100.31	72	79	47	47	50.8	50.5	418.32	300.04	10.35	7.39
3	99.95	81	91	49	48	48.5	48.6	372.01	311.23	11.02	7.99
4	100.63	86	95	52	49	50.0	49.4	345.77	291.74	10.56	7.46
5	100.74	88	91	49	49	48.5	47.8	379.51	323.63	11.11	8.07
6	99.88	97	96	53	53	46.6	46.7	454.88	346.06	11.09	8.31

Comments: See Appendix C.

STOP	DRIVER VEHICLE STOP COMMENTS		
#	(Wheel Lock-Up - Direction of Stop - Stay in Lane)		
1	-	NOX	SOUTH YES
2	-	NOX	SOUTH YES
3	-	NOX	SOUTH YES
4	-	NOX	SOUTH YES
5	-	NOX	SOUTH YES
6	-	NOX	SOUTH YES

How was the ABS failure induced: DISCONNECT RIGHT FRONT WHEEL SPEED SENSOR

Is brake system indicator lamp activated: YES (X) NO ()

Vehicle equipped with ABS integral variable proportioning valve. Cannot separately fail. Data Sheet 23 not included.

DATA INDICATES COMPLIANCE: YES (X) NO ()

Driver: JERRY INMAN Observer: NONE
Recorded Data Processed by: CHUCK JENKINS Date: 06/03/09
Approving Laboratory Official: RANDY LANDES Date: 06/05/09

Vehicle: 2009 MAZDA MOTOR COR NHTSA NUMBER: C95400 Transportation Research Center, Inc.
 Make: MAZDA 10820 State Route 347
 Model: MAZDA3 S TOURNG East Liberty, Ohio 43319
 Body Style: 4 DOOR SEDAN (937)666-2011 www.trcpg.com
 Front Cold Tire Pressure: 220 (Kpa)
 Rear Cold Tire Pressure: 220 (Kpa) Date Tested: 05/29/09

DATA SHEET 24 - BRAKE POWER UNIT OR PWR ASSIST UNIT IN/OP AT GVWR

Testing Conditions: INV DATA, Section 0080, 05/29/09, 10:41:29

Weather Conditions: 64°F Wind: 9 mph 337° Start Odo.: 630 End Odo.: 634

Failure Simulation: Disconnect primary source of power.

Method of rendering inoperative: Removed Engine Vacuum Hose at Booster

Schedule:

Initial Brake Temperature 65-100°C
 Initial Speed 100 km/h to zero
 6 stops with transmission in neutral

Performance Requirements:

One Stop with:
 Stopping Distance less than 168m
 Pedal force between 65N and 500N
 No Lock-Up allowed longer than 0.1 sec above 15 km/h
 Vehicle Must stay in lane of 3.5m

STOP #	INIT SPD (kph)	LEFT FRONT	RIGHT FRONT	LEFT REAR	RIGHT REAR	ACTUAL DISTANCE (meter)	CORRECTED DISTANCE (meter)	MAX. PEDAL FORCE (N)	AVG. PEDAL FORCE (N)	MAX. DECEL (m/sec ²)	AVG. DECEL (m/sec ²)
		IBT (°C)	IBT (°C)	IBT (°C)	IBT (°C)						
1	100.25	79	74	46	48	120.1	119.5	569.41	474.72	4.61	3.41
2	99.92	88	83	47	47	131.2	131.5	503.09	461.57	4.40	3.18
3	100.05	93	87	44	44	127.0	126.8	487.06	462.43	4.55	3.44
4	100.00	97	92	46	44	122.8	122.7	491.04	466.64	4.50	3.31
5	100.07	96	93	45	43	121.9	121.7	487.46	470.80	4.30	3.36
6	101.56	92	90	42	39	124.8	121.0	500.32	470.68	4.37	3.26

STOP #	DRIVER VEHICLE STOP COMMENTS			
	(Wheel Lock-Up - Direction of Stop - Stay in Lane)			
1	-	NOX	SOUTH	YES
2	-	NOX	SOUTH	YES
3	-	NOX	SOUTH	YES
4	-	NOX	SOUTH	YES
5	-	NOX	SOUTH	YES
6	-	NOX	SOUTH	YES

Is the brake system indicator lamp activated: YES () NO (X)

DATA INDICATES COMPLIANCE: YES (X) NO ()

Driver: JERRY INMAN Observer: NONE
 Recorded Data Processed by: CHUCK JENKINS Date: 06/03/09
 Approving Laboratory Official: RANDY LANDES Date: 06/05/09

Vehicle: 2009 MAZDA MOTOR COR NHTSA NUMBER: C95400
 Make: MAZDA
 Model: MAZDA3 S TOURNG
 Body Style: 4 DOOR SEDAN
 Front Cold Tire Pressure: 220 (Kpa)
 Rear Cold Tire Pressure: 220 (Kpa)

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 (937)666-2011 www.trcpg.com

Date Tested: 05/29/09

DATA SHEET 25 - PARKING BRAKE AT GVWR

Testing Conditions: INV DATA, Section 0085, 05/29/09, 13:16:43

Parking brake: AUTOMATIC TR Non-service type: HAND-OPERATED

Service type: N/A

Weather Conditions: 70°F Wind: 13 mph 306°

Start Odo.: 638

End Odo.: 638

Test Weight: Total:1792kg

Front: 982kg

Rear: 810kg

Schedule:

Initial Brake Temperature <100°C or (Ambient temp.
 if non-service brake type materials)

Loaded to GVWR with transmission in neutral

Drive onto 20% slope in forward and reverse directions.

Performance Requirements:

Up to Three Applies in each direction:

Parking brake must hold the vehicle stationary
 in both directions for 5 minutes each.

Pedal force: Hand control: <400 N

Foot control: <500 N

NOTE: For vehicles with parking brake systems not utilizing the
 service brake friction elements, the friction elements of such systems
 are to be burnished prior to parking brake tests according to the
 manufacturer's published recommendation as furnished to the purchaser.
 If no recommendations are furnished, test the system in an unburnished
 condition. If recommendations are furnished, record method used.

	MAX	MAX	LEFT	RIGHT	AVG					
	SERVICE	P-BRAKE	REAR	REAR	REAR					
APPLY	FORCE	FORCE	IBT	IBT	IBT					
#	(N)	(N)	(°C)	(°C)	(°C)					
=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
1	61.7	371.2	47	50	48.6	-	0 REAPPLY	UPHILL	HOLDS	20%
2	56.0	375.5	39	38	38.3	-	0 REAPPLY	DOWNHILL	HOLDS	20%

Is brake system indicator lamp activated: YES (X) NO ()

DATA INDICATES COMPLIANCE: YES (X) NO ()

Driver: JERRY INMAN

Observer: NONE

Recorded Data Processed by: CHUCK JENKINS

Date: 06/03/09

Approving Laboratory Official: RANDY LANDES

Date: 06/05/09

Vehicle: 2009 MAZDA MOTOR COR NHTSA NUMBER: C95400
 Make: MAZDA
 Model: MAZDA3 S TOURNG
 Body Style: 4 DOOR SEDAN
 Front Cold Tire Pressure: 220 (Kpa)
 Rear Cold Tire Pressure: 220 (Kpa)

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Date Tested: 05/29/09

DATA SHEET 26 - HEATING SNUBS AT GVWR

Testing Conditions: INV DATA, Section 0090, 05/29/09, 14:20:55

Schedule:

Conduct 15 snubs from 120 Km/h or 80% Vmax, whichever is slower, to 1/2 of initial speed.
 Attain required decel in 1 second and maintain that decel.
 Interval between snubs is 45 seconds and WOT to initial speed.

Performance Requirements:

Initial IBT for first snub is 55-65°C
 Maintain 3.0 m/s/s deceleration
 Vehicle Must stay in lane of 3.5m

SNUB #	AVG. DECEL (m/sec ²)	Time Between Snubs (second)	AVG. PEDAL FORCE (N)	LEFT FRONT IBT (°C)	RIGHT FRONT IBT (°C)	LEFT REAR IBT (°C)	RIGHT REAR IBT (°C)	INIT SPD (kph)
1	3.61	--NA--	46.52	63	62	49	51	119.70
2	3.41	48	44.04	92	89	69	74	119.30
3	3.32	43	40.97	121	118	89	97	119.95
4	3.33	45	41.84	146	144	109	118	119.09
5	1.02	22	10.23	171	171	126	137	121.22
6	3.08	69	35.48	184	186	142	147	119.84
7	3.36	44	40.40	194	196	153	154	119.53
8	3.31	46	39.18	203	206	164	162	120.75
9	3.24	45	36.06	213	212	173	170	120.32
10	3.27	44	35.20	218	216	181	177	120.44
11	3.10	45	35.08	224	221	188	191	120.25
12	3.10	46	34.33	229	227	196	203	120.33
13	2.38	45	23.46	233	233	203	212	120.93
14	3.16	45	33.64	239	237	208	217	119.58
15	3.26	45	33.69	244	242	212	220	120.09

STOP # DRIVER VEHICLE SNUB COMMENTS
 (Wheel Lock-Up - Direction of Stop - Stay in Lane)

STOP #	WHEEL LOCK-UP	DIRECTION OF STOP	STAY IN LANE
1	-	NOX	NORTH YES
2	-	NOX	EAST YES
3	-	NOX	SOUTH YES
4	-	NOX	SOUTH YES
5	-	NOX	SOUTH YES
6	-	NOX	WEST YES
7	-	NOX	NORTH YES
8	-	NOX	NORTH YES
9	-	NOX	NORTH YES
10	-	NOX	EAST YES
11	-	NOX	EAST YES
12	-	NOX	SOUTH YES
13	-	NOX	SOUTH YES
14	-	NOX	WEST YES
15	-	NOX	WEST YES

Comments: See Appendix C.

DATA INDICATES COMPLIANCE: YES (X) NO ()

Driver: JERRY INMAN Observer: NONE
 Recorded Data Processed by: CHUCK JENKINS Date: 06/03/09
 Approving Laboratory Official: RANDY LANDES Date: 06/05/09

Vehicle: 2009 MAZDA MOTOR COR NHTSA NUMBER: C95400
 Make: MAZDA
 Model: MAZDA3 S TOURNG
 Body Style: 4 DOOR SEDAN
 Front Cold Tire Pressure: 220 (Kpa)
 Rear Cold Tire Pressure: 220 (Kpa)

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Date Tested: 05/29/09

DATA SHEET 27 - HOT PERFORMANCE AT GVWR

Testing Conditions: INV DATA, Section 0095, 05/29/09, 14:32:00

Schedule:

Make 2 stops from 100 kph
 Pedal Force: 1st stop is done with an average force less than the average recorded in the shortest GVWR Cold Effectiveness stop.
 2nd stop is done with a force less than 500 N.

No Lock-Up allowed longer than 0.1 sec above 15 km/h.

Distance Requirements are based on the following:

shortest stop in Data Sheet 11 is: 6
 Initial speed of stop: 100.27 (kph)
 Actual distance of stop: 45.9 (meter)
 Average pedal force: 390.4 (N)

Performance Requirements:

Stop Number 1 must be less than: 69.8 (meter)
 In addition the stopping distance for at least one of the of the two hot stops must be less than: 89 (meter)

STOP	INIT	LEFT	RIGHT	LEFT	RIGHT	ACTUAL	CORRECTED	MAX.	AVG.		MAX.	AVG.
#	SPD	FRONT	FRONT	REAR	REAR	DISTANCE	DISTANCE	PEDAL	PEDAL		DECEL	DECEL
	(kph)	(°C)	(°C)	(°C)	(°C)	(meter)	(SAE 299)	FORCE	FORCE		(m/sec ²)	(m/sec ²)
=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
1	100.61	253	252	217	228	57.0	56.3	358.08	276.71	10.51	7.37	
2	99.75	268	269	221	234	50.9	51.1	*571.91	401.31	12.97	7.88	

STOP	DRIVER VEHICLE STOP COMMENTS			
#	(Wheel Lock-Up - Direction of Stop - Stay in Lane)			
=====	=====			
1	-	NOX	WEST	YES
2	-	NOX	NORTH	YES

*Comments: See Appendix C.

DATA INDICATES COMPLIANCE: YES (X) NO ()

Driver: JERRY INMAN Observer: NONE
 Recorded Data Processed by: CHUCK JENKINS Date: 06/03/09
 Approving Laboratory Official: RANDY LANDES Date: 06/05/09

Vehicle: 2009 MAZDA MOTOR COR NHTSA NUMBER: C95400
 Make: MAZDA
 Model: MAZDA3 S TOURNG
 Body Style: 4 DOOR SEDAN
 Front Cold Tire Pressure: 220 (Kpa)
 Rear Cold Tire Pressure: 220 (Kpa)

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Date Tested: 05/29/09

DATA SHEET 28 - BRAKE COOLING STOPS AT GVWR

Testing Conditions: INV DATA, Section 0100, 05/29/09, 14:35:01

Schedule:

Initial Brake Temperature:
 Achieved on completing Hot Performance
 Initial Speed 50 km/h to zero
 4 stops with transmission in gear

Performance Requirements:

Constant Decel rate: 3.0 m/s/s
 Pedal force adjusted as necessary
 No Lock-Up allowed longer than 0.1 sec above 15 km/h
 Vehicle Must stay in lane of 3.5m

STOP #	INIT SPD (kph)	AVG. DECEL (m/sec ²)	AVG. PEDAL FORCE (N)	LEFT FRONT IBT (°C)	RIGHT FRONT IBT (°C)	LEFT REAR IBT (°C)	RIGHT REAR IBT (°C)
1	50.64	2.67	33.81	226	223	191	200
2	50.21	2.71	44.21	180	171	152	162
3	50.55	2.86	41.67	147	139	127	137
4	49.80	2.94	49.87	128	122	112	120

STOP #	DRIVER VEHICLE STOP COMMENTS (Wheel Lock up - Direction of Stop - Stay in Lane)		
1	-	NOX	NORTH YES
2	-	NOX	NORTH YES
3	-	NOX	EAST YES
4	-	NOX	EAST YES

DATA INDICATES COMPLIANCE: YES (X) NO ()

Driver: JERRY INMAN	Observer: NONE
Recorded Data Processed by: CHUCK JENKINS	Date: 06/03/09
Approving Laboratory Official: RANDY LANDES	Date: 06/05/09

Vehicle: 2009 MAZDA MOTOR COR NHTSA NUMBER: C95400
 Make: MAZDA
 Model: MAZDA3 S TOURNG
 Body Style: 4 DOOR SEDAN
 Front Cold Tire Pressure: 220 (Kpa)
 Rear Cold Tire Pressure: 220 (Kpa)

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 10820 State Route 347
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Date Tested: 05/29/09

DATA SHEET 29 - RECOVERY PERFORMANCE AT GVWR

Testing Conditions: INV DATA, Section 0105, 05/29/09, 14:41:39

Weather Conditions: 73°F Wind: 10 mph 309° Start Odo.: 642 End Odo.: 660

Schedule:

Make 2 stops from 100 kph
 Pedal Force: Both stops are performed with an average force
 less than the average recorded in the
 shortest GVWR Cold Effectiveness stop.

Performance Requirements:

One of the two stops must be within the following limits:
 Upper limit of corrected stopping distance: 61.3 (meter)
 Lower limit of corrected stopping distance: 33.9 (meter)

No Lock-Up allowed longer than 0.1 sec above 15 km/h.

Distance Requirements are based on the following:

Shortest stop in Data Sheet 11: Stop 6
 Initial speed of stop: 100.27 (kph)
 Actual distance of stop: 45.9 (meter)
 Average pedal force: 390.4 (N)

STOP	INIT	LEFT	RIGHT	LEFT	RIGHT	ACTUAL	CORRECTED	MAX.	AVG.	MAX.	AVG.
#	SPD	FRONT	FRONT	REAR	REAR	DISTANCE	(SAE 299)	PEDAL	PEDAL	DECEL	DECEL
	(kph)	(°C)	(°C)	(°C)	(°C)	(meter)	(meter)	(N)	(N)	(m/sec ²)	(m/sec ²)
1	99.83	126	123	111	118	49.2	49.3	387.27	306.59	10.79	7.25
2	100.06	148	146	121	128	48.7	48.7	379.06	316.64	10.89	7.68

STOP	DRIVER VEHICLE STOP COMMENTS				
#	(Wheel Lock-Up	-	Direction of Stop	-	Stay in Lane)
1	-		NOX		SOUTH YES
2	-		NOX		SOUTH YES

DATA INDICATES COMPLIANCE: YES (X) NO ()

Driver: JERRY INMAN Observer: NONE
 Recorded Data Processed by: CHUCK JENKINS Date: 06/03/09
 Approving Laboratory Official: RANDY LANDES Date: 06/05/09

DATA SHEET 30 (Part 1 of 5)
6.0 Test Completion Inspection (7.17)

VEHICLE: 2009 Mazda3 S Touring

NHTSA NO.: C95400

ODO.: 670 mi.

DATE: 06/02/09

System Integrity (S5.6)

Each vehicle shall meet the complete performance requirements of this standard without:

(a) Detachment or fracture of any component of the braking system such as brake springs and brake shoes or disc pad facings, other than minor cracks, that do not impair attachment of the friction facings. All mechanical components of the braking system shall be intact and functional. Friction facing tearout (complete detachment of lining) shall not exceed 10 percent of the lining on any single frictional element.

(b) Any visible brake fluid or lubricant on the friction surface of the brake or leakage at the master cylinder or brake power unit reservoir cover, seal, and filler openings.

Friction Material Condition: Primary/Inner		Friction Material Condition: Secondary/Outer	
LF	Normal Appearance & Color	LF	Normal Appearance & Color
RF	Normal Appearance & Color	RF	Normal Appearance & Color
LR	Normal Appearance & Color	LF	Normal Appearance & Color
RR	Normal Appearance & Color	RR	Normal Appearance & Color
Drum (or Rotor) Condition:		Brake Fluid/Lubricant Inside Brakes:	
LF	Normal Appearance & Color	LF	None
RF	Normal Appearance & Color	RF	None
LR	Normal Appearance & Color	LR	None
RR	Normal Appearance & Color	RR	None
Hydraulic Component Condition:		Mechanical Component Condition:	
LF	Good	Brk/Pedal	Good
RF	Good	Power Brk	Good
LR	Good	Stop/Lamp	Good
RR	Good	Linkage	Good
M/Cyl	Good	Other	NA

COMPLIANCE: Yes X No

Comments: None.

Technician: Jerry Inman

DATA SHEET 30 (Part 2 of 5)
TEST COMPLETION INSPECTION (\$7.17)

VEHICLE: 2009 Mazda3 S Touring;
 MASTER CYLINDER RESERVOIR:

NHTSA NO.: C95400; GVWR: 1792 kg

DATE	06/01/09		Requirements	Pass	Fail
Reservoir Compartments (S5.4.1)					
(1) Does master cylinder have a reservoir compartment for each brake subsystem?	<u>Yes</u>	Master cylinder shall have a reservoir compartment for each subsystem.	X		
	No				
(2) Does loss of fluid in one compartment result in complete loss from another compartment?	Yes	Loss of fluid from one compartment shall not cause complete loss from another compartment.	X		
	<u>No</u>				
Reservoir Capacity (S5.4.2)					
Shall conform to requirements (1) or (2), state units:					
(1) For reservoirs having completely separate compartments for each subsystem (two separate, independent reservoirs):					
Subsystem 1 Subsystem reservoir capacity		Each compartment (reservoir) shall have a minimum capacity equivalent to the fluid displacement resulting when all wheel cylinders or caliper pistons serviced by that independent compartment/reservoir moves from a new lining, fully retracted position to a fully worn, properly adjusted, fully applied position. (Use Data Sheet 31 and Appendix 1A)	NA	NA	
Subsystem 1 Fluid displaced from new to worn lining					
Subsystem 2 Subsystem reservoir capacity			NA	NA	
Subsystem 2 Fluid displaced from new to worn lining					
2) For reservoirs utilizing a portion of the reservoir for a common supply to two or more subsystems:					
Total minimum capacity for the entire master cylinder reservoir (includes individual compartment reservoirs)	312 ml	Shall have total minimum capacity for entire reservoir for displacement resulting from all subsystem wheel cylinders or caliper positions moving from new lining to full worn condition as above.	X		
Fluid displaced from new to worn linings (ALL linings)	142.0 ml*				
*Value calculated from Data Sheet 31					

Comments: None.

Technician: Jerry Inman

DATA SHEET 30 (Part 3 of 5)
TEST COMPLETION INSPECTION (S7.18)

VEHICLE: 2009 Mazda3 S Touring; NHTSA NO.: C95400; GVWR: 1792 kg

MASTER CYLINDER RESERVOIR:

DATE	06/01/09	Requirements	Pass	Fail
Master Cylinder Piston Displacement(S5.4.2) [If Common Reservoir Supply - continued from previous page]				
Fluid displaced by three strokes of master cylinder piston for Subsystem No. 1.	28.0 ml	Individual partial compartments of reservoir shall each have a minimum of fluid equal to at least the volume displaced by the master cylinder piston servicing the subsystem during a <u>full stroke</u> of the piston. NOTE: Procedure uses three strokes to ensure an accurate measurement.		
Fluid displaced by three strokes of master cylinder piston for Secondary (Subsystem No. 2)	28.0 ml			
Fluid displaced per stroke, Subsystem No. 1.	9.3 ml			
Fluid displaced per stroke, Subsystem No. 2.	9.3 ml			
Fluid available in partial compartment Subsystem No. 1	23.0 ml		X	
Fluid available in partial compartment Subsystem No. 2	40.0 ml		X	
Brake Power Unit Reservoir (S5.4.2)				
Volume displaced in charging system piston or accumulator to normal operating pressure plus wheel cylinder or caliper piston displacement.		Shall have a capacity at least equal to fluid displacement required to charge the system pistons on accumulators to normal operating pressure <u>plus</u> displacement when wheel cylinders or caliper pistons move from new lining to full worn condition as above.	NA	
Reservoir Labeling (S5.4.3)				
Exact copy of reservoir label: On top of master cylinder reservoir: <u>WARNING:</u> <u>CLEAN FILLER CAP BEFORE REMOVING.</u> <u>USE ONLY DOT 3 FLUID FROM A SEALED CONTAINER.</u>		Label shall read: "Warning, clean filler cap before removing; use only * fluid from a sealed container". * Fluid type specified in 49 CFR 571.116	X	
Measure letter height	4.0 mm	Letters shall be at least 3.2 mm/ 0.125" high	X	
Describe label attachment method and location. <u>Embossed on top of the master cylinder reservoir filler cap; in a contrasting (yellow) color.</u>		Lettering shall be permanently affixed, engraved or embossed and located so as to be visible by direct view either on or within 100 mm/3.94 inches of the brake fluid reservoir filler plug or cap.	X	
Does the lettering contrast with the background?	<u>Yes</u>	If label is not engraved or embossed, letters shall be of a color that contrasts with the background	NA	
	No			

Comments: None.

Technician: Jerry Inman

DATA SHEET 30 (Part 4 of 5)
TEST COMPLETION INSPECTION (\$7.18)

VEHICLE: 2009 Mazda3 S Touring; NHTSA NO.: C95400; DATE: 06/01/09
BRAKE SYSTEM WARNING INDICATOR (\$5.5)

CONDITION	ANSWER	REQUIREMENTS	PASS	FAIL
Brake Systems Indicator Lamp <u>Function Check</u> (\$5.5.2) (Bulb and systems check)				
Describe location of brake indicator lamp: <u>Approximate mid-line, left side of the instrument cluster.</u>	NA	Shall be in front, and in clear view, of driver.	X	
Does lamp light with ignition (start) switch at ON/RUN?	Yes	Automatic activation when ignition switch is "on" when engine not running , or ignition between "on" and "start" if is manufacturer check position- OR -single manual action by driver	X	
Does lamp light with ignition between ON and Start?	Yes			
Brake check description in owner's manual?	Yes	Manufacturer shall explain the brake check function test procedure in the owner's manual.	X	
Brake System Warning Indicator ACTIVATION (\$5.5.1) DURATION (\$5.5.3) FUNCTION (\$5.5.4)				
CONDITION	Light ON?	REQUIREMENT	PASS	FAIL
A. In event of hydraulic leak (1) On or before appearance of pressure differential of 218 psi (split system)	NA	When ignition (Start) switch is ON , lamp must light whenever (A), (B), (C), or (D) occurs. In addition, if service brake system is not a split system, audible warning must be activated when any condition in (A) exists. Visual warning indicator for non-split systems must be flashing.	X	
(2) If any reservoir falls below either "safe" level or 25% of capacity, whichever is greater. Values: 127 ml or cc (below "min" mark).	Yes			
(3) On or before supply pressure to brake power unit falls to 50%	NA			
B. Electrical functional failure in an antilock or variable brake proportioning system.	Yes			
C. Application of the parking brake.	Yes			
D. Brake lining wear-out if optical warning.	NA			
E. For a vehicle with <u>electrically-actuated service brakes</u> , failure of the source of electric power to the brakes or diminution of state of charge of the batteries.	NA			
F. For a vehicle with <u>electric transmission of the service brake control signal</u> , failure to a brake control circuit.	NA			
G. For an EV with RBS that is part of the service brake system failure of RBS.	NA			
<u>Must have Audible alarm if not split system</u> and a condition in (a) above exists?	NA			
If condition (A) (2) above does not exist, then fluid reservoir must be transparent for fluid check without the need for reservoir to be opened? (\$5.4.4)	NA		X	
Indicator lamps remain activated as long as condition exists - ignition "on", and engine on or off? _____ (\$5.5.3 DURATION))	Yes			
Visual warning – continuous or flashing? Audible warning –continuous or flashing?	Yes-Cont. NA			

Comments: None.

Technician: Jerry Inman

DATA SHEET 30 (Part 5 of 5)
TEST COMPLETION INSPECTION (\$7.18)

VEHICLE: 2009 Mazda3 S Touring; NHTSA NO.: C95400; DATE: 06/01/09

BRAKE SYSTEM WARNING INDICATOR LABELING (\$5.5.5)

CONDITION AND REQUIREMENT	ANSWER NOTE: Standard requires that the answer to questions be YES	PASS	FAIL
Are visual indicators legible to driver in daylight and nighttime conditions when activated?	Yes	X	
Are visual indicator words 3.2 mm (.125") high minimum? Record Height: "BRAKE" – <u>4.0 mm</u> ; "ABS" – <u>4.0 mm</u> .	Yes	X	
Visual indicator words and background contrasting colors, one of which is red. Record colors <u>Letters – Red, Lens – Black</u>	Yes	X	
If split system, is there one brake indicator? If yes, does it say the word "Brake"?	Yes	X	
If not split system; is there a separate indicator for loss of fluid or fluid pressure? Does this indicator say "Stop-Brake Failure"? Are the letters block and not less than 6.4 mm (.25") in height? Record letter height _____	NA		
If separate indicator for: 1. Low brake fluid per S5.5.1(a)(1), does indicator say "Brake Fluid"? NOTE: not required for mineral oil system Record wording: _____ 2. Gross pressure loss per S5.5.1(a)(2), does indicator say "Brake Pressure"? Record wording: _____ 3. Electrical functional failure in antilock or variable proportioning system per S5.5.1(b), letters and background contrasting colors one of which is yellow? Record colors <u>Lens – Black, Letters – Yellow</u> . Does indicator say "Antilock" or "ABS" or "Brake Proportioning"? Record wording: <u>"ABS"</u> . 4. Parking brake per S5.5.1(c), does indicator say "Park" or "Parking Brake"? Record wording: _____ 5. Brake lining wear-out per S5.5.1(d), does indicator say "Brake Wear"? Record wording: _____. 6. If separate indicator for RBS, the letters and background shall be of contrasting colors, one of which is yellow. The indicator shall be labeled "RBS". RBS failure in a system which is part of the service brake system may also be indicated by a yellow lamp that also indicates "ABS" failure and displays the symbol "ABS/RBS." Record wording: _____ 7. For any other function? If yes, Record _____ NA	NA NA Yes Yes NA NA NA	X	

DATA INDICATES COMPLIANCE: YES X NO _____

Comments: None.

Technician: Jerry Inman

DATA SHEET 31 (Part 1 of 2)
CALCULATION OF MINIMUM RESERVOIR VOLUME REQUIREMENTS
VEHICLE: 2009 Mazda3 S Touring; NHTSA NO.: C95400; DATE: 06/02/09

BRAKE		LINING		
LOCATION	TYPE	DESCRIPTION	MINIMUM THICKNESS	THICKNESS TO FULLY WORN (1) mm*
Left Front	Drum	Leading	Pre-test 11.25 mm	2
		Primary	Post Test 10.76 mm	
		Inboard X	Δ 0.49 mm	
	Disc X	Trailing	Pre-test 11.30 mm	2
		Secondary	Post Test 10.79 mm	
		Outboard X	Δ 0.51 mm	
LINING CLEARANCE:	Diametrical (2): N/A	Inboard: 0 mm.	Outboard: 0 mm.	
WHEEL CYLINDER DIAMETER (3): N/A		CALIPER PISTON DIAMETER (3): 56.93 mm (x1 piston).		
SHOE CAGE DIAMETER (4) <u>N/A</u> ; CENTER POINT OF BRAKE ASSY TO CENTER POINT OF W.C. <u>N/A</u>				
Right Rear	Drum	Leading	Pre-test 10.16 mm	2
		Primary	Post Test 9.98 mm	
		Inboard X	Δ 0.18 mm	
	Disc X	Trailing	Pre-test 10.16 mm	2
		Secondary	Post Test 9.88 mm	
		Outboard X	Δ 0.28 mm	
LINING CLEARANCE:	Diametrical (2) N/A mm	Inboard – 0 mm	Outboard – 0 mm	
WHEEL CYLINDER DIAMETER (3): N/A		CALIPER PISTON DIAMETER (3): 37.93 mm (x1 piston).		
SHOE CAGE DIAMETER (4): N/A		CENTER POINT OF BRAKE ASSY TO CENTER PT. OF W.C.: N/A		
CIRCUIT #1 CONSISTS OF:	LF - X	LR	RF	RR - X
CIRCUIT #2 CONSISTS OF:	LF	LR - X	RF - X	RR
(1) MFRS. RECOMMENDATIONS – FRONT: 2 mm & REAR: 2 mm.				
(2) REAR – 0 mm. FRONT – 0 mm.				
(2) DRUM BRAKES, MEASURED AT HORIZONTAL CENTERLINE: NA.				
(3) MFRS. DATA: FRONT – 57 mm, 1 piston; REAR – 38 mm, 1 piston.				
(4) RESET POSITION: NA.				

Comments: Manufacturer's new total lining thickness: Front – 12.0 mm, Rear – 10.8 mm.

Technician: Jerry Inman

DATA SHEET 31 – SECTION CONTINUED (Part 2 of 2)Vehicle: 2009 Mazda3 S Touring;NHTSA No.: C95400;Date: 05/20/09**Procedure and Example for Determining Master Cylinder Volume Requirement**

The procedure followed for determining the minimum volume requirements is outlined in the example shown below. The required data is taken from the previous page, both measured and manufacturer's data.

DISC BRAKES

Volume Required, $V_r = (\Delta t_i + t_{ic} + \Delta t_o + t_{oc}) \times [\pi (D^2)]/4$, where –

V_r = Volume required per wheel
 Δt = Change in thickness (average)
 i = Inboard
 o = Outboard
 D = Caliper cylinder diameter
 c = Average clearance

Using the above equations, the volume requirements for Subsystem No. 1 (LF/RR) and Subsystem No. 2 (RF/ LR) were calculated utilizing measured and manufacturer's provided data to create the greatest displacement, as shown below:

Disc Brake: $V_r = (\Delta t_i + t_{ic} + \Delta t_o + t_{oc}) \times \frac{\pi D^2}{4}$
 (Front)

$$\Delta t_i = 10 \text{ mm}$$

$$\Delta t_o = 10 \text{ mm}$$

$$t_{ic} + t_{oc} = 0 \text{ mm}$$

$$D = 57 \text{ mm}$$

$$V_r = (10 + 0 + 10 + 0) \frac{\pi (57)^2}{4}$$

$$= 20 (2551.76)$$

$$= 51035.2 \text{ mm}^3 = 51.0 \text{ ml (x1 Piston)} = 51.0 \text{ ml}$$

Disc Brake: $V_r = (\Delta t_i + t_{ic} + \Delta t_o + t_{oc}) \times \frac{\pi D^2}{4}$
 (Rear)

$$\Delta t_i = 8.8 \text{ mm}$$

$$\Delta t_o = 8.8 \text{ mm}$$

$$t_{ic} + t_{oc} = 0 \text{ mm}$$

$$D = 38 \text{ mm}$$

$$V_r = (8.8 + 0 + 8.8 + 0) \frac{\pi (38)^2}{4}$$

$$= 17.6 (1134.11)$$

$$= 19960.4 \text{ mm}^3 = 20.0 \text{ ml (x1 Piston)} = 20.0 \text{ ml}$$

For System 1 (LF & RR)

$$V_{r1} = 51035.2 \text{ mm}^3 + 19960.4 \text{ mm}^3 = 70995.6 \text{ mm}^3$$

$$V_{r1} = 70995.6 \text{ mm}^3 = (71.0 \text{ ml})$$

For System 2 (RF & LR)

$$V_{r2} = V_{r1}$$

$$V_{r2} = 70995.6 \text{ mm}^3 = (71.0 \text{ ml})$$

$$\text{TOTAL VOLUME REQUIRED} = V_t = V_{r1} + V_{r2} = 71.0 + 71.0 = 142.0 \text{ ml}^*$$

Section 6.0

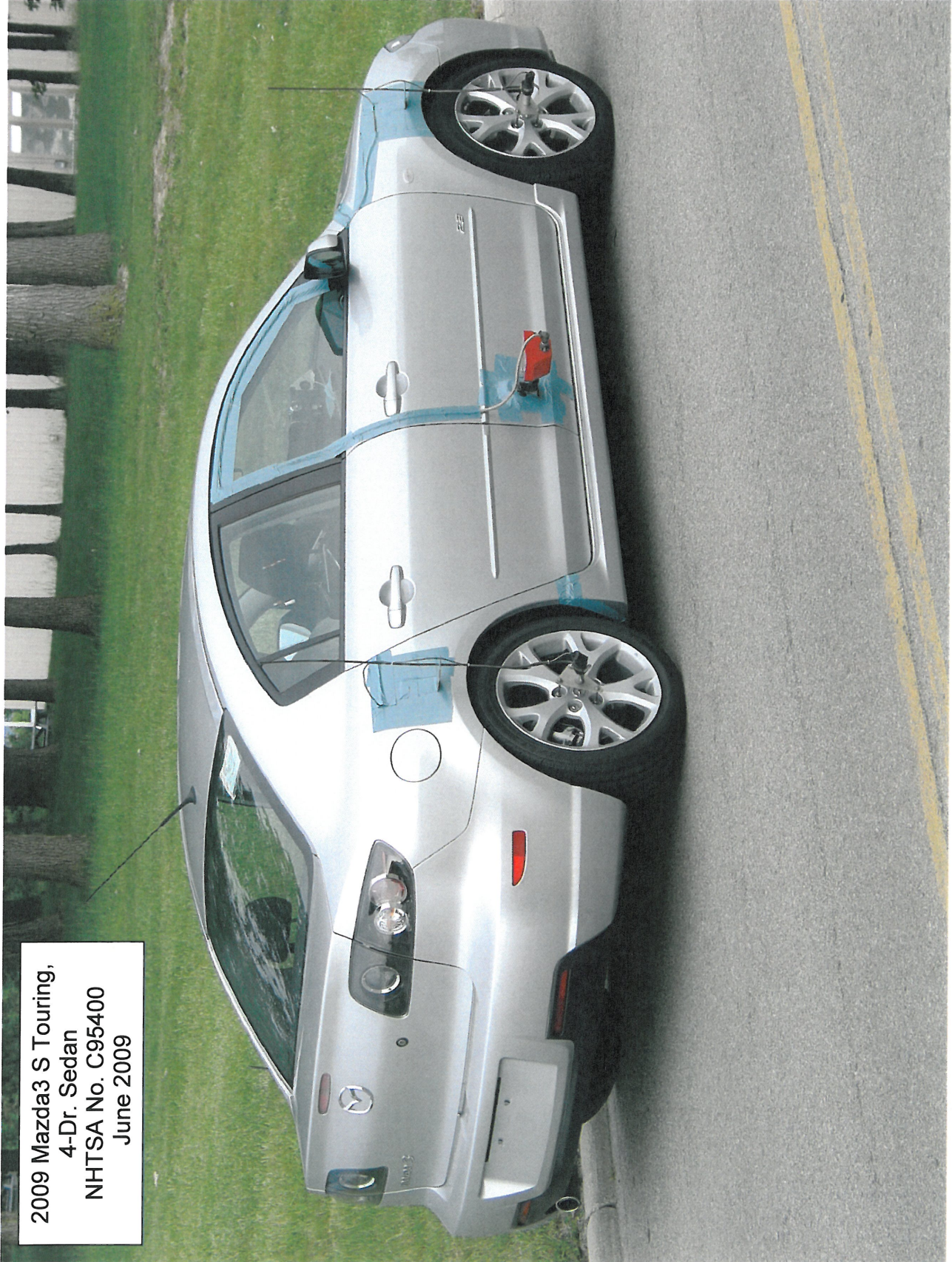
Photographs

2009 Mazda3 S Touring,
4-Dr. Sedan
NHTSA No. C95400
June 2009



Left Front 3/4 View

2009 Mazda3 S Touring,
4-Dr. Sedan
NHTSA No. C95400
June 2009



Right Rear 3/4 View

2009 Mazda3 S Touring,
4-Dr. Sedan
NHTSA No. C95400
June 2009

MFD. BY MAZDA MOTOR CORPORATION

DATE	GVWR/PNBV	GAWR/PNBE	FRT	GAWR/PNBE	RR
09/08	3951 LB	2163 LB		1788 LB	
	1792 KG	981 KG		811 KG	

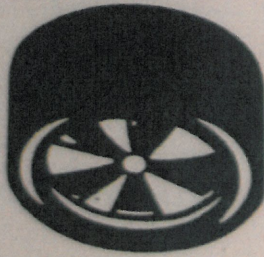
THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR VEHICLE SAFETY
, BUMPER, AND THEFT PREVENTION
STANDARDS IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE.

JM1BK323691232072 TYPE: PASSENGER

BODY COLOR CODE: 22V

MADE IN JAPAN

2009 Mazda3 S Touring,
4-Dr. Sedan
NHTSA No. C95400
June 2009



TIRE AND LOADING INFORMATION

SEATING CAPACITY : TOTAL 5 : FRONT 2 : REAR 3

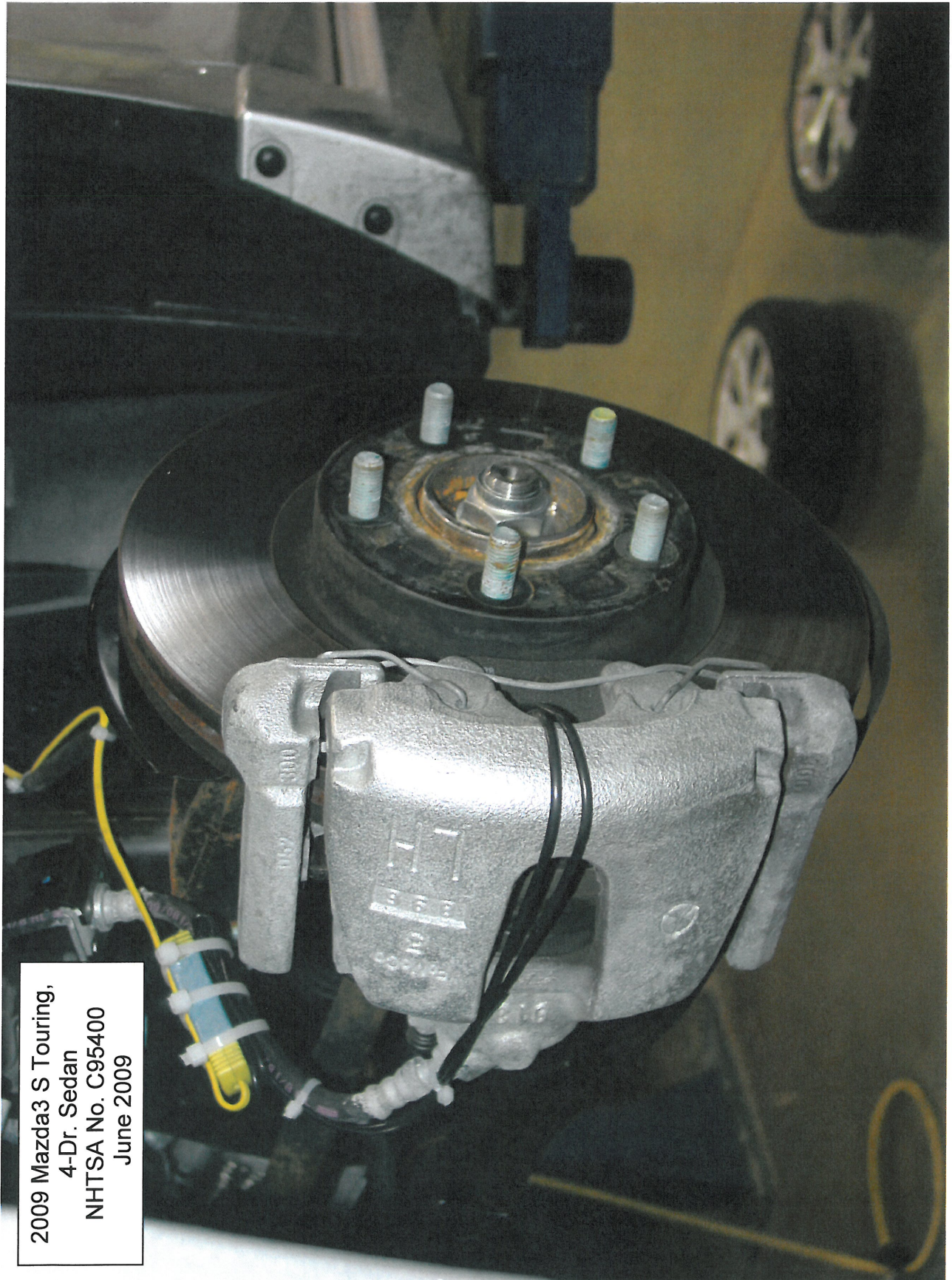
The combined weight of occupants and cargo should never exceed 385kg or 850lbs.

TIRE	SIZE	COLD TIRE PRESSURE
FRONT	P205/50R17	220KPA, 32PSI
REAR	P205/50R17	220KPA, 32PSI
SPARE	T125/70D16	420KPA, 60PSI

SEE OWNER'S
MANUAL FOR
ADDITIONAL
INFORMATION

(BAP1A)

2009 Mazda3 S Touring,
4-Dr. Sedan
NHTSA No. C95400
June 2009



Left Front Thermocouple Installation



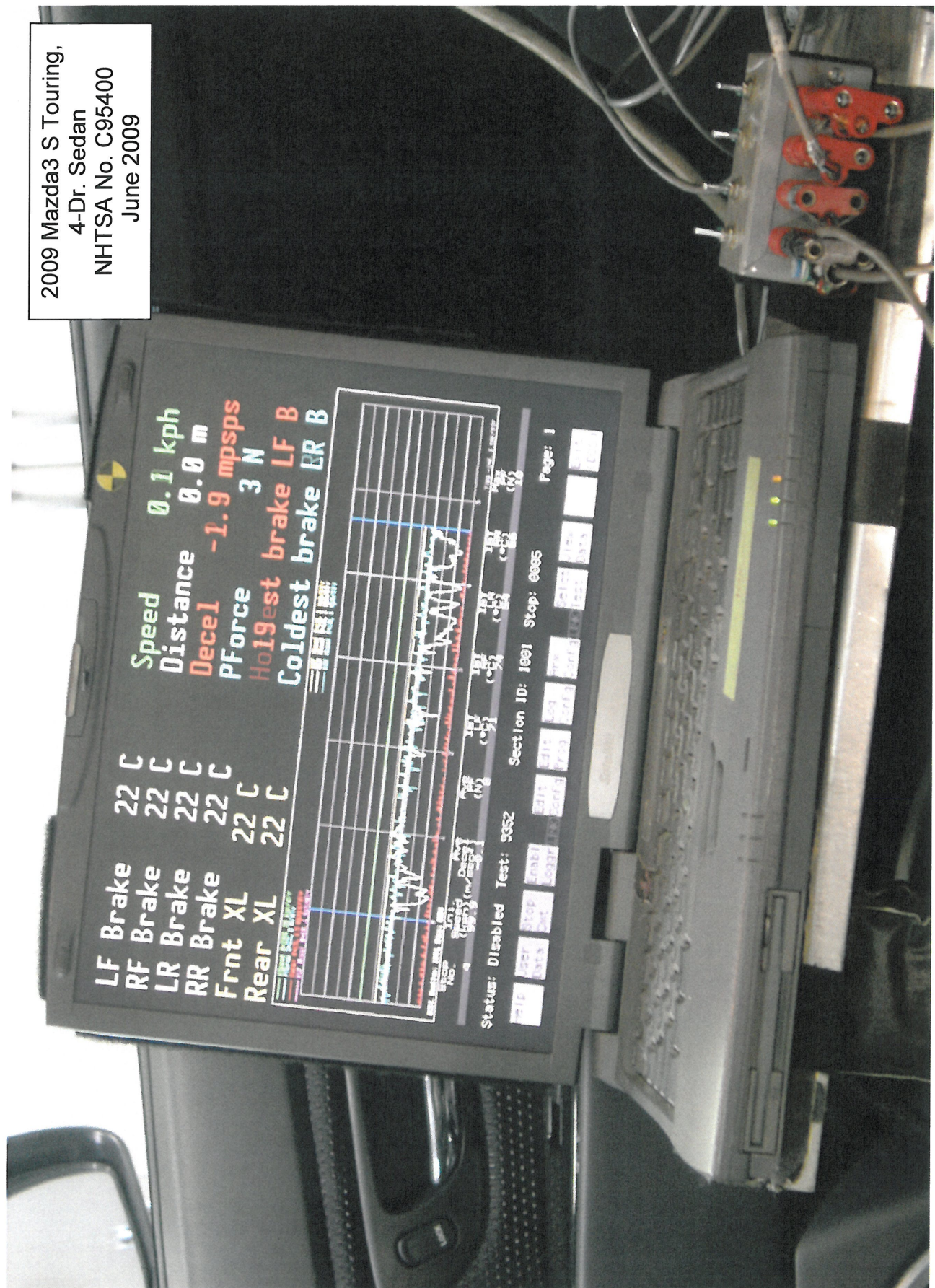
2009 Mazda3 S Touring,
4-Dr. Sedan
NHTSA No. C95400
June 2009

Right Rear Thermocouple Installation

2009 Mazda3 S Touring,
4-Dr. Sedan
NHTSA No. C95400
June 2009



2009 Mazda3 S Touring,
4-Dr. Sedan
NHTSA No. C95400
June 2009



Test Instrumentation in Vehicle



2009 Mazda3 S Touring,
4-Dr. Sedan
NHTSA No. C95400
June 2009

Test Instrumentation in Vehicle



2009 Mazda3 S Touring,
4-Dr. Sedan
NHTSA No. C95400
June 2009

Test Instrumentation (and Ballast) in Vehicle

2009 Mazda3 S Touring,
4-Dr. Sedan
NHTSA No. C95400
June 2009

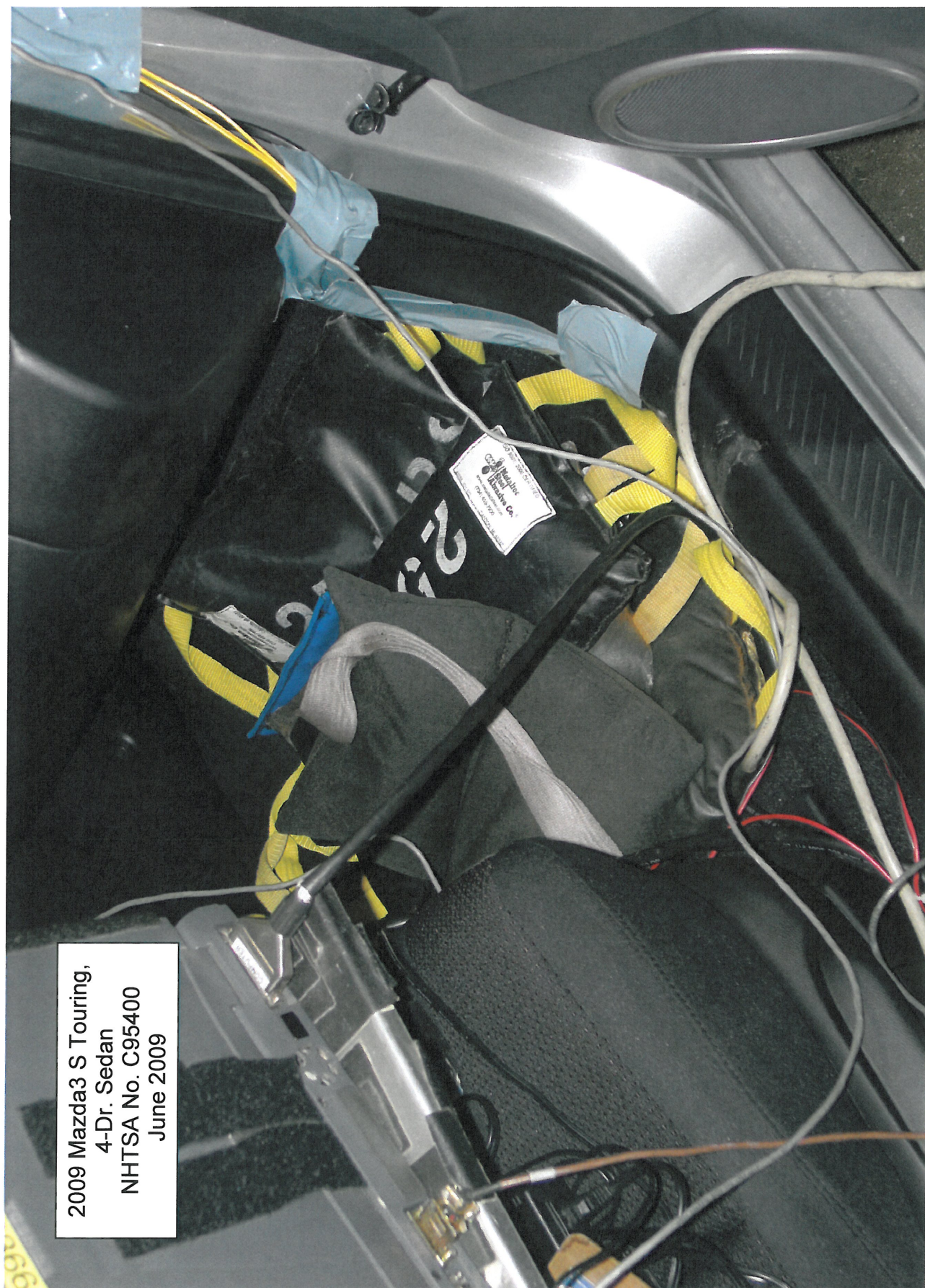


Test Instrumentation in Vehicle

2009 Mazda3 S Touring,
4-Dr. Sedan
NHTSA No. C95400
June 2009

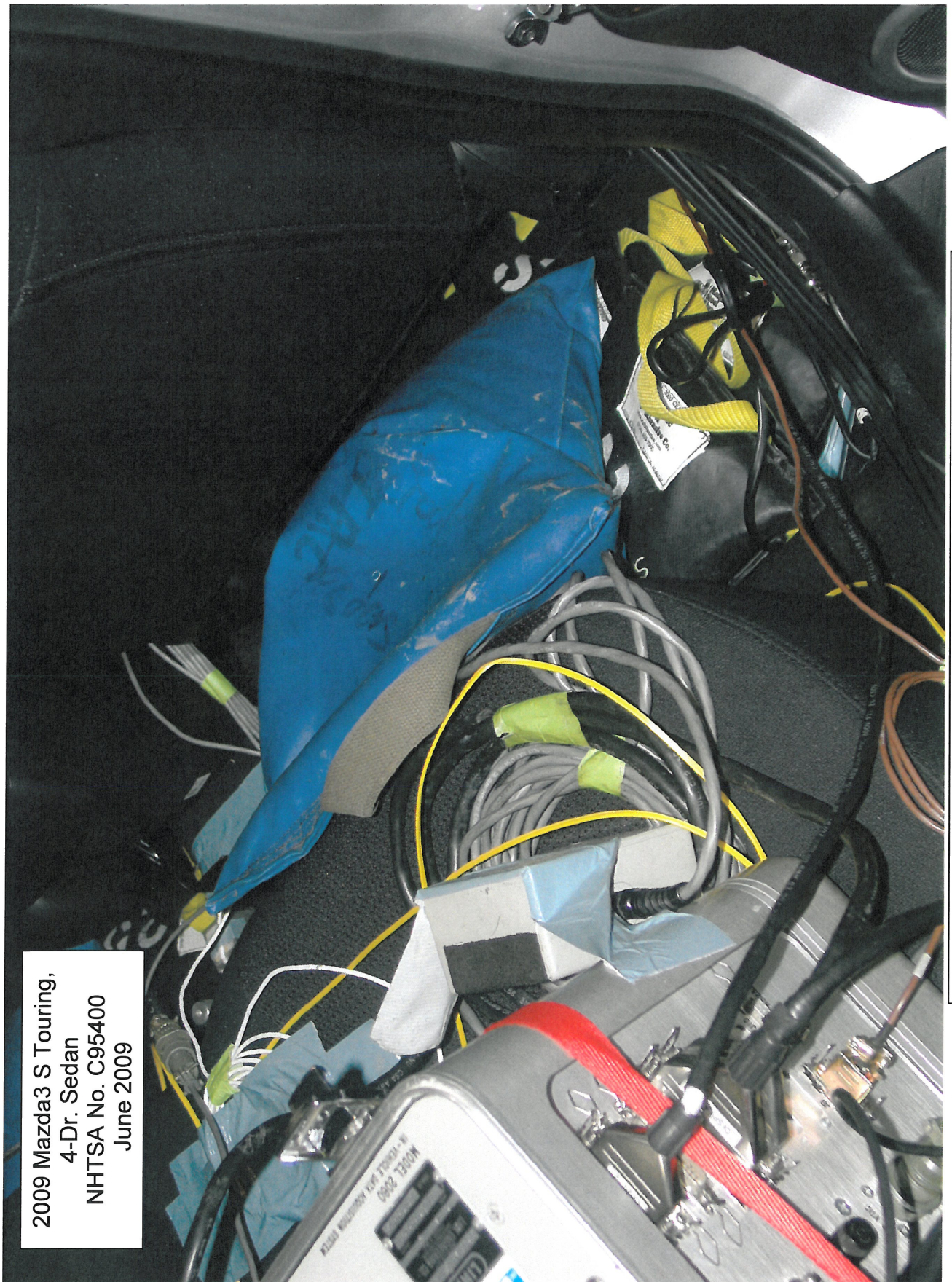


Vehicle Being Weighed

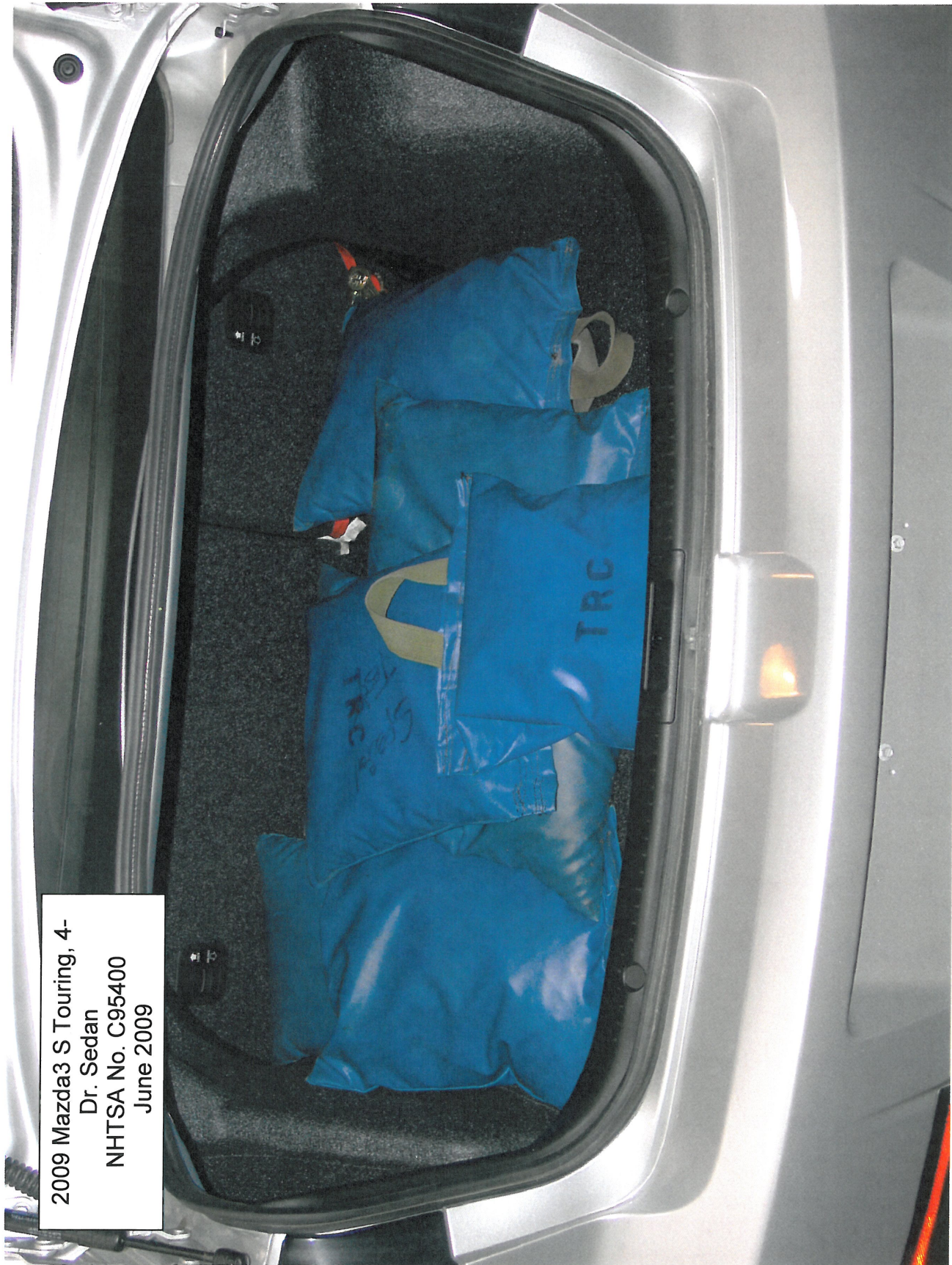


Ballast in Vehicle

2009 Mazda3 S Touring,
4-Dr. Sedan
NHTSA No. C95400
June 2009



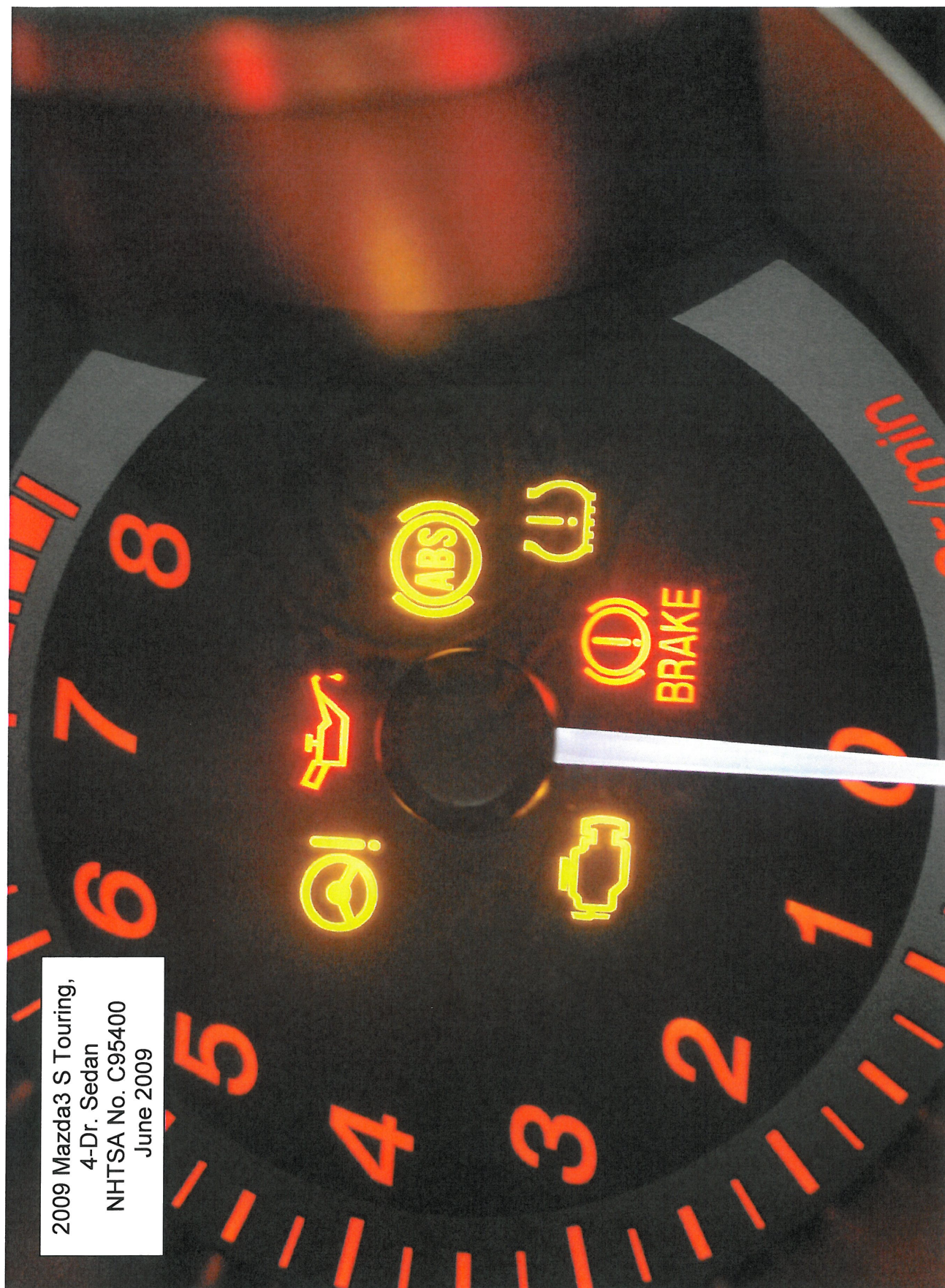
Ballast in Vehicle



2009 Mazda3 S Touring, 4-
Dr. Sedan
NHTSA No. C95400
June 2009

Ballast in Vehicle

2009 Mazda3 S Touring,
4-Dr. Sedan
NHTSA No. C95400
June 2009



Brake System and ABS Indicator (Warning) Lamps

2009 Mazda3 S Touring,
4-Dr. Sedan
NHTSA No. C95400
June 2009

WARNING:
CLEAN FILLER CAP
BEFORE REMOVING. USE
ONLY DOT 3 FLUID FROM
A SEALED CONTAINER.
AVERTISSEMENT:
NETTOYER LE BOUCHON
AVANT DE LE DÉPOSER. N'EM-
PLOYER QUE DU LIQUIDE
DOT 3 PROVENANT
D'UN CONTENANT
SCELLÉ

Brake System (Master Cylinder) Reservoir Warning Label

7.0 INSTRUMENT CALIBRATION (12 MONTH MAXIMUM INTERVAL)

VEHICLE: 2009 Mazda3 S Touring;

NHTSA NO.: C95400;

DATE: 05/15/09

INSTRUMENT	SERIAL NUMBER	CALIBRATION DATE	NEXT CALIBRATION
Data Acquisition System - Link DAS 2030	955009	11/10/08	11/10/09
Computer – Toshiba/Link Engrg.	TRC-43366	Not Applicable	Not Applicable
Software - Link Engrg. Rev Data	TRC Propr.	NA	NA
LF Torque Wheel	Not Utilized		
RF Torque Wheel	Not Utilized		
LR Torque Wheel	Not Utilized		
RR Torque Wheel	Not Utilized		
Stopwatch – Fisher Scientific (Heating Snubs)	SN-97216633	08/27/08	08/27/09
Stopwatch – Accusplit (Daily Cals)	SW-ST03	08/27/08	08/27/09
Tire Pressure Gauge – WIKA	AG-101 97216633	05/06/09	08/04/09
Pedal Force Transducer – Sensor Devel.	169755	Each Test	Each Test
Asst. Pipe-Handle Steel Weights - Ohaus	LB-0001	06/04/08	06/04/09
Park Brake Force Transducer – Interface	LC-41721	Each Test	Each Test
LF Hydraulic Pressure Transducer	Not Utilized		
RF Hydraulic Pressure Transducer	Not Utilized		
LR Hydraulic Pressure Transducer	Not Utilized		
RR Hydraulic Pressure Transducer	Not Utilized		
Accelerometer - Setra (+ or – 15 g) 141A	A-118555	Each Test	Each Test
Fifth Wheel – ADAT DSR6/1aa Radar	1400082	Each Test	Each Test
Wind Velocity/Direct. – Davis Model 6410	050608N22	07/13/08	07/13/09
Ambient Temp. Gage–Davis Mod. 6150	050608N02	07/13/08	07/13/09
LF Brake Thermocouple - Temprel/Link	T52-0B-24K	Ea. Test w/Link	Ea. Test w/Link
RF Brake Thermocouple - Temprel/Link	T52-0B-24K	Ea. Test w/Link	Ea. Test w/Link
LR Brake Thermocouple - Temprel/Link	T52-0B-24K	Ea. Test w/Link	Ea. Test w/Link
RR Brake Thermocouple - Temprel/Link	T52-0B-24K	Ea. Test w/Link	Ea. Test w/Link
Lock-up Detection System	TRC Propr.	Each Test	Each Test
Vehicle Weight – Toledo/Mettler Scales JAGXTREME 3000000, (Bldg. 70)	SN 5225831- 5JC	05/05/09	08/05/09

Quality Assurance: _____

DAILY CALIBRATIONS CONTINUED (2 of 3)

Vehicle: 2009 Mazda3 S Touring

NHTSA No.: C95400

Wheel Tachometer Calibrations for Unit 9352

Wheel tachometer calibrations: all wheel speeds should be 15 km/h

Wheel Lock Detector	While at a standstill, check zeros. Drive vehicle at approx. 15 km/h and engage zero speed switch for each wheel	"Date"	"Time"	Zero	@15km/h	Zero	@15km/h	Zero	@15km/h	Zero	@15km/h
		stp	stp	LF	LF	RF	RF	LR	LR	RR	RR
		5/26/2009	8:33:52	0.0	16.4	0.0	16.7	-0.1	16.7	0.0	16.3
		5/26/2009	15:39:32	-0.1	15.5	-0.1	15.8	-0.1	15.8	-0.1	15.3
		5/27/2009	8:05:18	-0.1	16.0	-0.1	16.3	-0.1	19.0	-0.1	15.9
		5/27/2009	15:12:46	-0.1	16.4	-0.1	16.7	-0.1	16.7	-0.1	16.2
		5/28/2009	12:26:13	-0.1	17.1	-0.1	17.4	-0.1	17.4	-0.1	17.0
		5/29/2009	7:50:49	-0.1	16.6	-0.1	16.9	-0.1	16.8	-0.1	16.5
		5/29/2009	14:57:56	-0.1	15.6	-0.1	15.9	-0.2	16.1	-0.1	15.5

When driven over 15 km/hr and the wheel tack generators are shunted to zero volts, does the graphical screen indicate wheel lock at each wheel position? X Yes No.

Pedal Force Meter Calibration for Unit 9352

Target shunt calibration is 801 N

Desired recorded value is: 801 N

Desired recorded actual force calibration check value is: 500 N

Allowed deviation is: 6.5 N

Service brk. pedal effort	Driver engages a fixed shunt cal switch.	"Date"	"Time"	Zero	Cal Val
		stp	stp	Force	Force lb
		5/19/2009	10:30:19	-1.8	803.1
		5/19/2009	15:38:44	-2.4	803.3
		5/20/2009	7:57:38	-1.6	803.1
		5/20/2009	14:02:30	-2.1	802.7
		5/26/2009	8:29:54	-2.2	802.3
		5/26/2009	15:36:31	-1.6	802.9
		5/27/2009	8:02:01	-2.0	802.7
		5/27/2009	15:09:32	-1.9	803.2
		5/28/2009	12:23:01	-1.2	803.1
		5/29/2009	7:47:43	-1.8	802.9
		5/29/2009	14:54:55	-2.2	802.7
		6/1/2009	8:31:21	-1.8	803.1

POST CAL

Pre-Test Linearity Check - 05/19/09

Actual	Recorded
Force (N)	Force (N)
0	0
222	222
445	445
498	498

Post-Test Linearity Check - 05/29/09

Actual	Recrdd
Force (N)	Frc(N)
0	0
222	222
445	444
498	496

Parking Brake Transducer Cal: Shunt Cal - 331 N, Unit 9352 - 05/29/09

Pre-Test

Actual	Recorded
Force (N)	Force (N)
0	0
222	222
445	445

Post-Test

Actual	Recrdd
Force (N)	Frc(N)
0	0
222	222
445	445

DAILY CALIBRATIONS CONTINUED (3 of 3)

Vehicle: 2009 Mazda3 S Touring

NHTSA No.: C95400

Dynamic Speed Calibration for Unit 9352

Desired speed value is: 100 km/h

Allowed deviation is: 1.6 km/h

Desired time value is: 36 seconds

Allowed deviation is: + or - 0.6 seconds

Light beam Drive vehicle
speed sensor at a steady
100 km/h
through a
kilometer.

"Date"	"Time"	"Speed"	Time"
stp	stp	km/h	sec
5/19/2009	11:18:15	100.1	36.15
5/19/2009	15:44:48	99.7	36.31
5/20/2009	8:04:17	100.4	36.18
5/20/2009	14:09:25	100.3	36.00
5/26/2009	8:46:41	100.5	36.15
5/26/2009	15:41:58	100.3	36.00
5/27/2009	8:10:55	99.3	36.15
5/27/2009	15:18:00	100.1	36.03
5/28/2009	12:35:59	100.6	36.03
5/29/2009	7:55:38	100.2	36.12
5/29/2009	15:04:41	100.2	36.20

APPENDIX A

Copy of Manufacturer's Sticker

EPA Fuel Economy Estimates

These estimates reflect new EPA methods beginning with 2008 models

CITY MPG

22

Expected range
for most drivers
18 to 26 MPG

HIGHWAY MPG

28

Expected range
for most drivers
23 to 33 MPG

**Estimated
Annual Fuel Cost
\$2,565**

based on 15,000 miles
at \$4.10 per gallon

Combined Fuel Economy

This Vehicle

24

**Your actual
mileage will vary**
depending on how you
drive and maintain
your vehicle.

11 42

COMPACT



See the **FREE Fuel Economy Guide** at dealers or www.fueleconomy.gov



PARTS CONTENT INFORMATION:

FOR VEHICLES IN THIS CLASS:
U.S./CANADIAN PARTS CONTENT:
0%

MAJOR SOURCES OF FOREIGN
PARTS CONTENT: JAPAN 95%

NOTE: PARTS CONTENT DOES
NOT INCLUDE FINAL ASSEMBLY,
DISTRIBUTION, OR OTHER
NON-PARTS COSTS.

FOR THIS VEHICLE:
FINAL ASSEMBLY POINT:
HIROSHIMA, JAPAN
COUNTRY OF ORIGIN:
ENGINE: JAPAN
TRANSMISSION: JAPAN

GOVERNMENT SAFETY RATINGS

**Frontal
Crash** ★★★★★
Driver ★★★★★
Passenger ★★★★★

Star ratings based on the risk of injury in a frontal impact.
Frontal rating should ONLY be compared to other vehicles of
similar size and weight.

**Side
Crash** ★★★★★
Front seat Not Rated
Rear seat Not Rated

Star ratings based on the risk of injury in a side impact.

Rollover ★★★★★
Star ratings based on the risk of rollover in a single vehicle crash.

Star ratings range from 1 to 5 stars (★★★★★) with 5 being the highest.
Source: National Highway Traffic Safety Administration (NHTSA).

www.safercar.gov or 1-888-327-4236

2009 Mazda3

Model: **2009 MAZDA3 S 4-DOOR TOURING**
Exterior Color: **SUNLIGHT SILVER METALLIC**
Interior Color: **BLACK**

STANDARD EQUIPMENT

ENGINE/MECHANICAL FEATURES

- 2.3L DOHC 16-VALVE I4 ENG. W/VVT
- 5-SPEED SPORT AUTOMATIC TRANSMISSION
- FRONT WHEEL DRIVE
- INDEPENDENT FRONT/REAR SUSPENSION
- FRONT & REAR STABILIZER BARS

EXTERIOR FEATURES

- 17-INCH ALLOY WHEELS
- P205/60 R17 ALL-SEASON TIRES
- HALOGEN HEADLIGHTS & FOG LIGHTS
- VARIABLE INTERMITTENT FRONT WIPERS

INTERIOR FEATURES

- CLOTH SEATS & CARPET FLOOR MATS
- 60/40 SPLIT FOLD-DOWN REAR SEAT
- AM/FM/CD WMP3 6-SPEAKER AUDIO
- STEERING WHEEL AUDIO CONTROLS
- SIRIUS SATELLITE RADIO COMPATIBLE
- AUXILIARY AUDIO INPUT JACK
- TILT & TELESCOPIC STEERING COLUMN
- CRUISE CONTROL
- POWER WINDOWS & DOOR LOCKS
- DUAL ILLUM VISOR VANITY MIRRORS

SAFETY AND SECURITY FEATURES

- 36-MONTH/36,000 MILE "BUMPER-TO-BUMPER WARRANTY"
- 60 MONTH/60,000 MILE POWERTRAIN WARRANTY
- 24-HOUR ROADSIDE ASSISTANCE
- 5-PASSENGER 3-POINT SAFETY BELTS
- ADVANCED DUAL FRONT AIR BAGS(SRS)

- VARIABLE-ASSIST POWER STEERING
- 4-WHEEL DISC BRAKES
- ANTI-LOCK BRAKE SYSTEM (ABS)
- WIEBD & BRAKE ASSIST
- DYNAMIC STABILITY CONTROL (DSC)
- TRACTION CONTROL SYSTEM (TCS)

- SIDE TURN-SIGNAL REPEATER LIGHTS
- REAR WINDOW DEFOGGER
- BODY COLOR DUAL POWER MIRRORS
- SPORT-TYPE FRONT & REAR BUMPERS
- SIDE SILL EXTENSIONS

- AIR CONDITIONING W/ POLLEN FILTER
- CENTER ARMREST W/ DUAL STORAGE
- DUAL FRONT CUP HOLDERS & DOOR POCKETS W/ BOTTLE HOLDERS
- ADJUSTABLE DRIVER'S SEAT HEIGHT & LUMBAR SUPPORT
- REAR CENTER ARMREST 1/2 CUPHOLDERS
- LEATHER-WRAPPED STEERING WHEEL
- ELECTROLUMINESCENT GAUGES

- TIRE PRESSURE MONITORING SYSTEM
- ANTI-WHIPSPLASH FRONT SEAT DESIGN
- LATCH CHILD SAFETY SEAT ANCHORS
- TRIPLE-H BODY CONSTRUCTION
- ANTI-THEFT ENGINE IMMOBILIZER
- REMOTE KEYLESS ILLUMINATED ENTRY
- SIDE-IMPACT AIR BAGS & CURTAINS

MSRP*	\$19,775
Total Vehicle and Options	\$19,775
Delivery, Processing and Handling Fee	\$670
Total MSRP*	\$20,445

LP

JM1BK323691232072

SOLD TO: 61558

BASS MAZDA
4900 DETROIT ROAD
SHEFFIELD VILLAGE, OH 44035

SHIP TO: 61558

BASS MAZDA
4900 DETROIT ROAD
SHEFFIELD VILLAGE, OH 44035

MS-STR-A-BAPNAG-TA-TA-20081021

This label is affixed pursuant to the Federal Automobile Disclosure Act. Gasoline, License and Title fees, Sales and Local taxes, and Dealer installed options are not included.

All children instinctively know it.

A few adults still remember it. One unique car company refuses to outgrow it.

In grown-up language, it means the exhilaration and liberation that come from experiencing sheer motion.

But as usual, children put it much better.

And simply call it Zoom-Zoom.

We practice it every day. It's why we build the kind of cars we do.

Mazda. Always the soul of a sports car.*

MazdaUSA.com

*MSRP (Manufacturer's Suggested Retail Price)



mazda

APPENDIX B

Discussion on Data

DISCUSSION ON DATA

Symbols for Brake Components

4	-	4 Wheel	G	-	Groan	DL	-	Deceleration (State FPSPS)
X	-	Skid	SQ	-	Squeal	PF	-	Pedal on Floor
L	-	Left	SQK	-	Squeak	SCP	-	Shoe Scrape
R	-	Right	PO	-	Pinchout	RB	-	Rubber Banding
R	-	Rear	P	-	Pull	O	-	Odor
F	-	Front	R	-	Shudder	NOX	-	No Skid
B	-	Both	M	-	Momentary			

INT or INIT	-	Initial Part of Stop
MID	-	Middle of Stop
END	-	End of Stop

All stops were made manually.

APPENDIX C

Contractor's Comments Procedure Modifications and Test Facility

Comments for vehicle C95400.

For all recorded decelerations:

The recorded *average* deceleration values for the tests are slightly lower than that which is required or targeted for certain test sections. However, in all cases and in reality, the driver maintained the correct required/target deceleration values for the majority of time for each of those stops. The recorded deceleration is acquired from the moment the service brake pedal is moved until the vehicle reaches zero speed. Therefore, the time needed to achieve the target deceleration (rise time) and the time the vehicle goes from the target deceleration to zero (fall time) is included in the average deceleration calculation. The rise and fall times were added to the entire length of the stops. Hence, the recorded average deceleration values were generally and slightly less than the required/target deceleration values.

For Data Sheet 16 – Antilock Functional Failure at LLVW, the “ABS” and traction warning lamps came on. When reconnecting the right front wheel speed sensor, the warning lamps did not extinguish. The technician connected a “Snapon Solus Pro” scan tool to the OBDII connector and cleared the codes. These same warning lamps alighted during testing for Data Sheet 22 – Antilock Functional Failure at GVWR and were cleared in like manner.

The Hydraulic Circuit Failure Tests were not performed to the lab procedure sequence to both save time and cause minimal disruption to the hydraulic brake system. Sequence: Circuit #1 @ LLVW, Circuit #2 @ LLVW, Circuit #2 @ GVWR, and Circuit #1 @ GVWR.

For Data Sheet 26 – Heating Snubs at GVWR, the pedal force transducer’s zero drifted up far enough to engage the DAS. This resulted in a false and early trigger Snub #5 and resulted in low average deceleration and pedal force. The driver quickly re-calibrated between snubs (without stopping) and resolved the problem.

For Data Sheets 27 – Hot Performance at GVWR, the driver momentarily exceeded the maximum allowable pedal of 500N by 72N. Given the distance margin in which the vehicle stopped as well as the average deceleration generated, it is believed that, had the driver not exceeded 500N, the vehicle would have stopped in less distance than the stated allowable maximum.

7.5-MILE TEST TRACK

The 7.5-mile test track encloses a 1,600-acre area, one mile wide and 3.5 miles long.

The track has a downward grade, north to south, of 0.228 percent and a cross slope in the straightaways of 3/16 inch per foot. The 1.88 mile long straightaways flow into transition areas 2,300 feet in length and then into 5,275-foot long curves with a constant radius of 2,400 feet. The 36-foot wide straightaways and the 42-foot wide curves provide three test lanes. Paved berms, 12 feet in width, border the straightaways and the inside of the curves.

As a vehicle moves toward the outside of the track in the curves, it encounters a progressively steeper bank. The inside lane (or "slow" lane) has a bank of 10 degrees allowing a neutral speed of 80 mph with no side forces. In the center lane, the slope increases to 19 degrees resulting in a neutral speed of 110 mph. The outside lane's 28-degree bank allows a 140 mph neutral speed. Rimming the outer lane is a seven-foot safety lane culminating in a 36-degree slope at the guardrail.

The facility is paved with Portland cement concrete. It carries a maximum single axle load of 36,000 pounds and a maximum tandem axle load weight of 48,000 pounds. Special provisions can be made for heavier weight loads.

With 22.5 lane miles, our track will accommodate many vehicles simultaneously. Research which utilizes the track includes component performance and durability studies, brake tests, aerodynamic studies, fuel economy studies, drive line efficiency tests, and the determination of vehicular acceleration and cruise characteristics. In addition, it supports maximum speed determination, road load power, noise and emission measurements and tire durability test programs.

The 7.5-mile test track can be used in conjunction with other facilities at TRC. It provides an excellent area for pre-test conditioning of equipment such as brake burnishing, tire break-in, and vehicle warm-up.

TRC SKID PAD

The Skid Pad is a test facility which is utilized primarily for the evaluation of tire and brake systems.

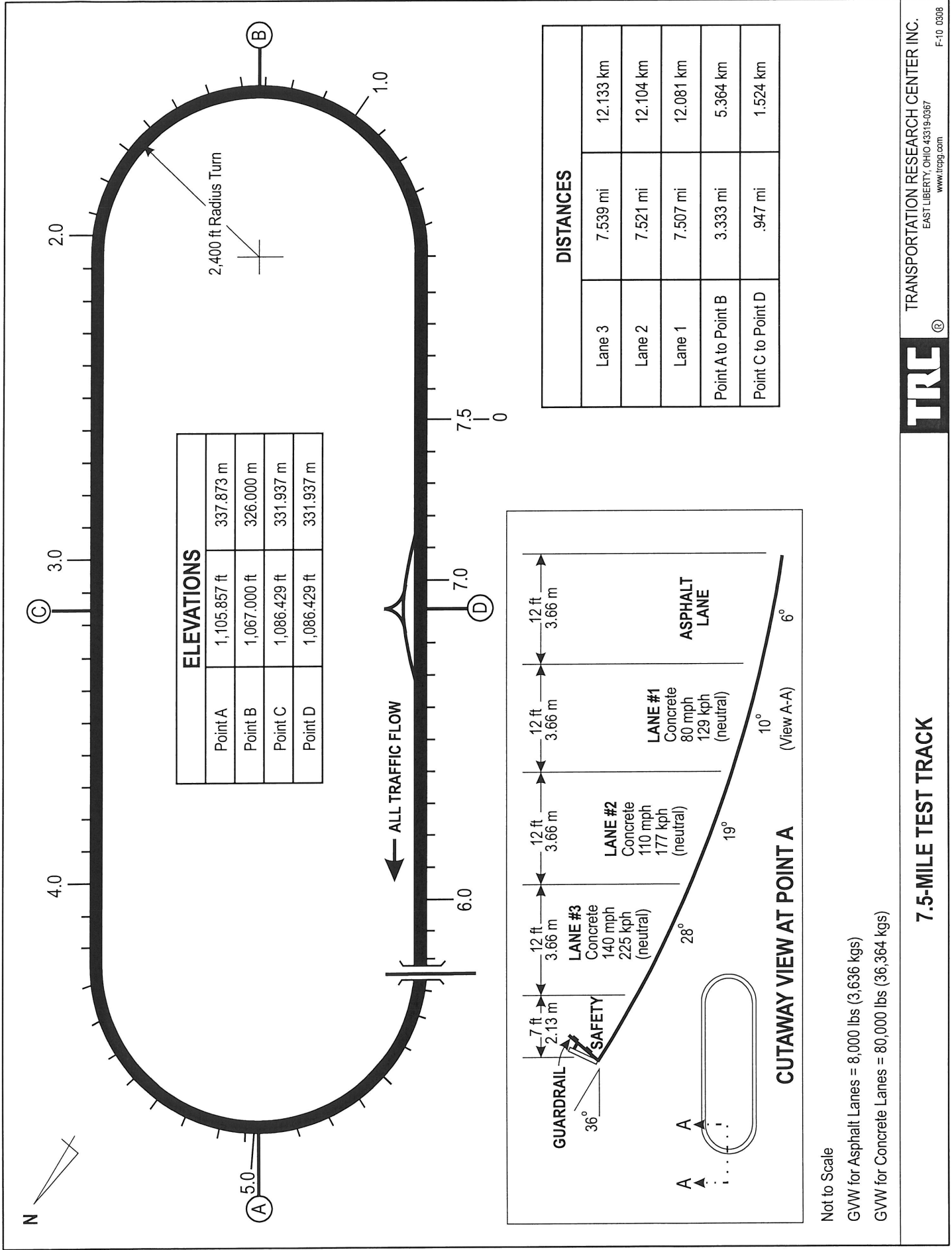
The overall dimensions of the pad are 9,000 feet by 84 feet with loops on the north and south ends. Both turnaround loops have a 309-foot radius and are 16 feet wide with a 25 percent super elevation. They will accommodate speeds of 45 mph with zero side force and 60 mph with .5 g's lateral acceleration. The acceleration/deceleration lanes at each end are 3,280 feet in length.

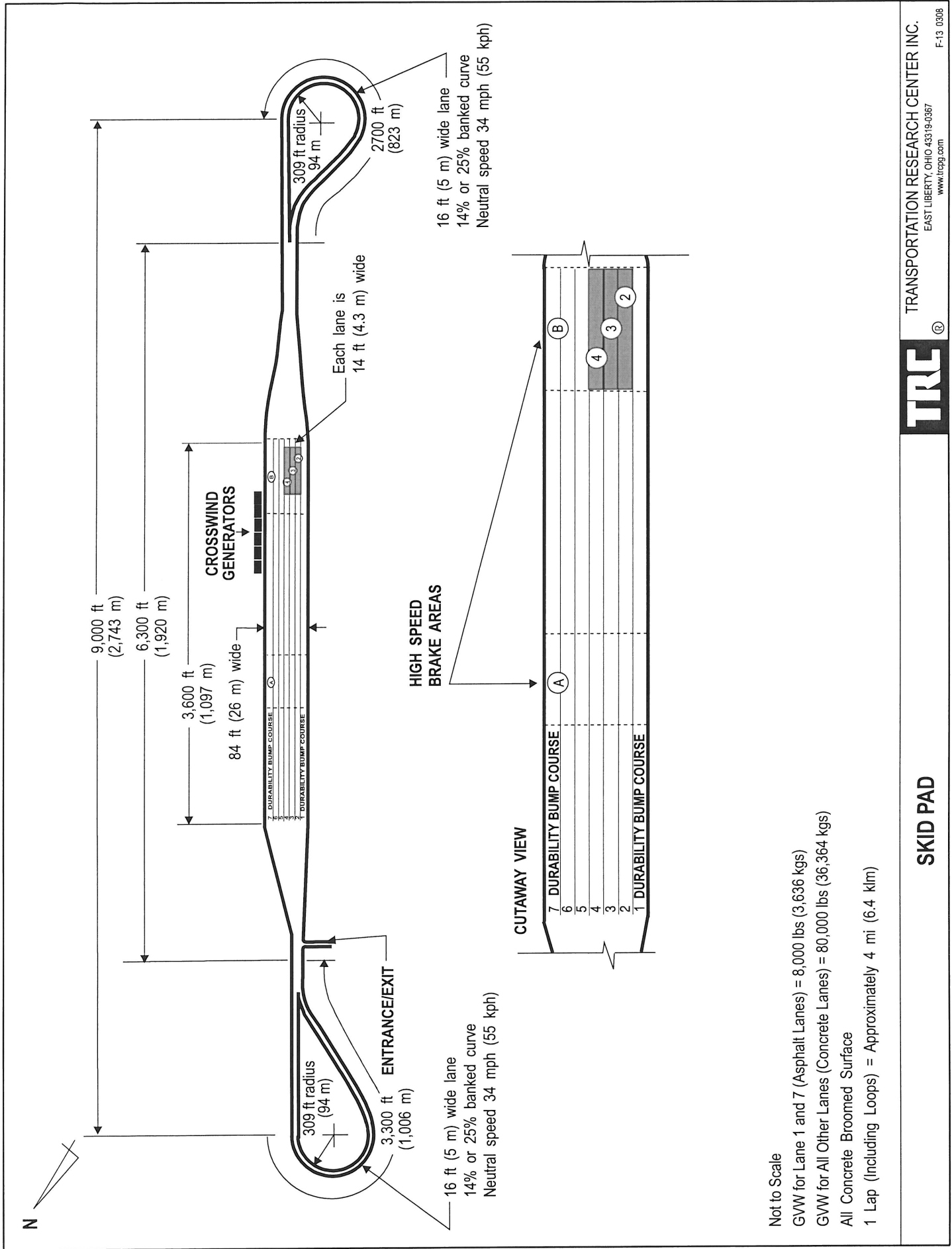
A test area of 210,000 square feet is situated in the center of the skid pad containing several test pads with varying surface textures. Skid numbers in this area range from 30 (wet) to 80 (dry).

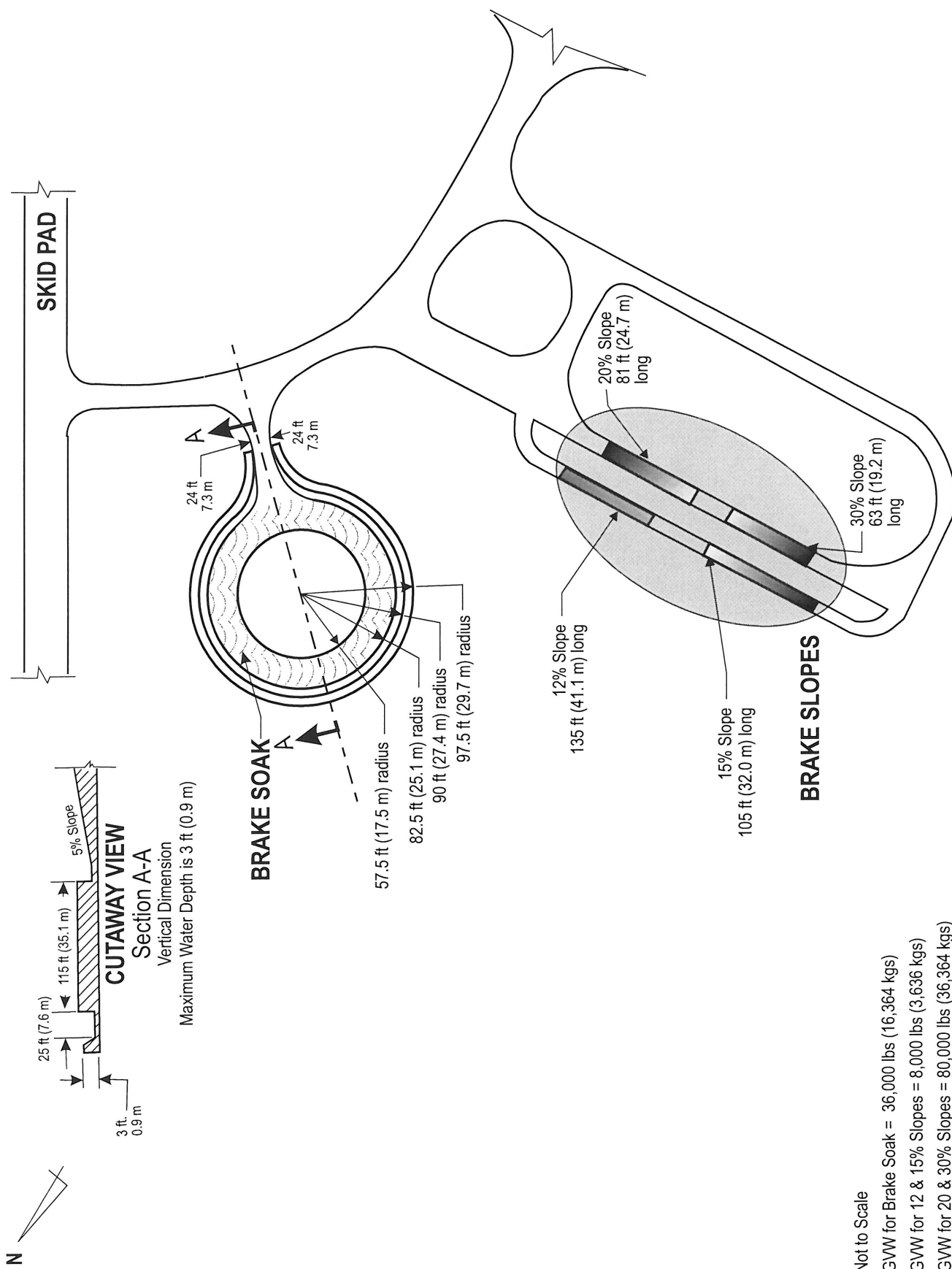
The skid pad is paved with Portland cement. The load capacity of the skid pad is 36,000 pounds maximum single axle weight and 48,000 pounds maximum tandem axle weight.

Varying surface textures in the main test area are ideal for testing tire and/or brake system performance on different surfaces as characterized by "skid numbers." The skid pad is also used for acceleration studies, aerodynamics, rolling resistance, noise testing, and vehicle top speed determination.

The subject test vehicle was rear wheel anti lock equipped. Rather than rapidly and fully applying the service brake control, the driver modulated the service brake control as necessary to control/prevent front wheel lock.





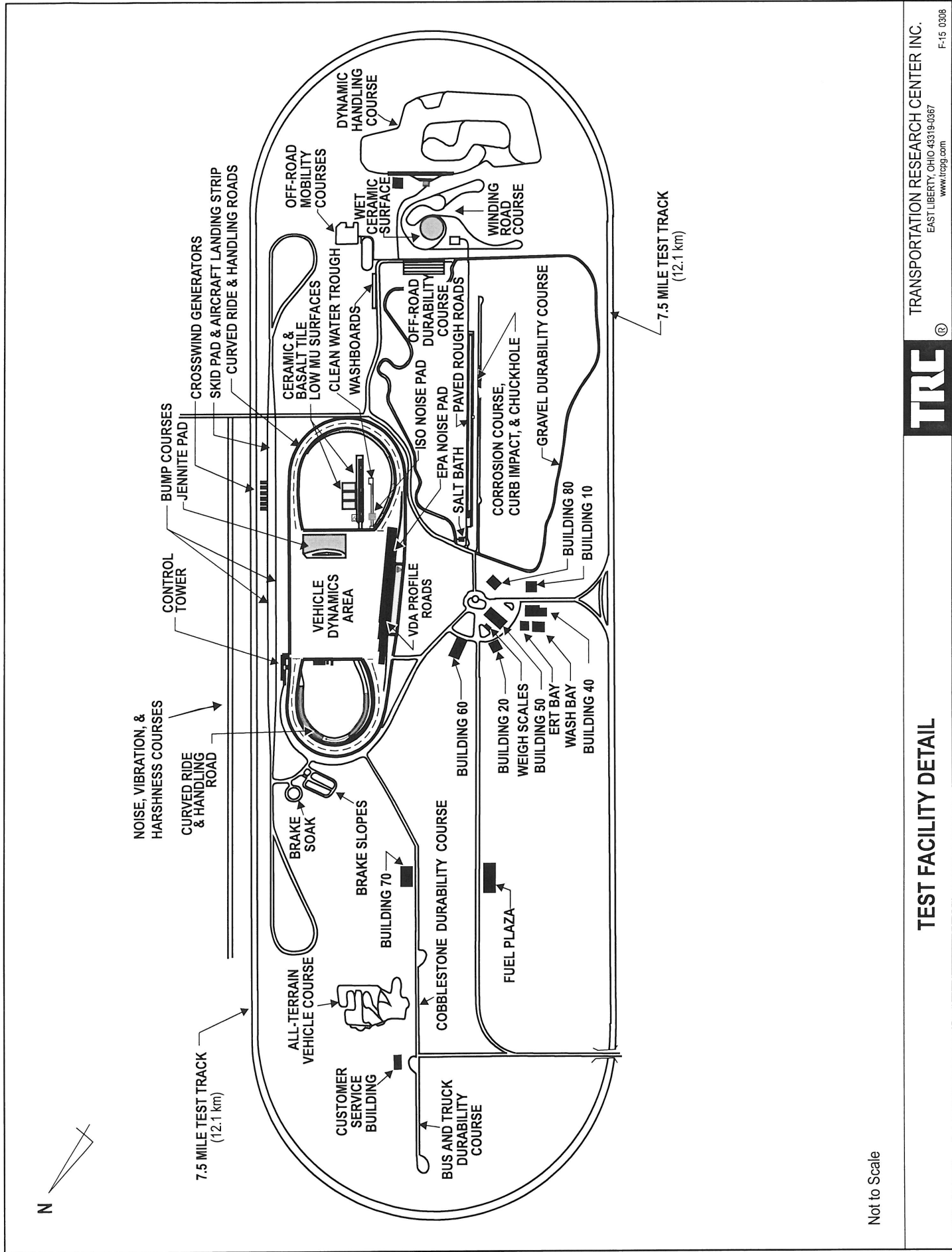


Not to Scale
 GVW for Brake Soak = 36,000 lbs (16,364 kgs)
 GVW for 12 & 15% Slopes = 8,000 lbs (3,636 kgs)
 GVW for 20 & 30% Slopes = 80,000 lbs (36,364 kgs)

BRAKE SOAK & BRAKE SLOPES



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Not to Scale

TEST FACILITY DETAIL



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APPENDIX D
Notice of Possible Non-Compliance

This vehicle (C95400) met the requirements of the FM VSS 135 Standard.